

Learn to live and laugh —  
thus delay your epitaph

**Stories of the Week**  
**Hats Off to George Jones**  
**New Cadillac Accessory**  
**Ingenious Cooling**  
**Out of Our Mailbag**  
**More Colloquialisms**

#### Stories of the Week

An old farmer's wife had a bad heart condition. Time after time—over a period of years—their daughter rushed out to where he was ploughing, and shouted that mama was dying.

Whereupon the farmer would unhitch the mule and dash back to the house. On each occasion the old lady had recovered by the time he got there.

After umpteen repetitions of this tableau his wife WAS dead when the old man arrived.

"Well," he relaxed. "This is more like it."

Evangelist Billy Graham tells a story about the Archbishop of Canterbury and his inspection tour of an orphanage. All the youngsters had been cautioned to address the Primate as "Your Grace," or "My Lord."

One tyke, when the Archbishop asked him how old he was, blurted:

"My God, I'm ten."

#### Hats Off to George Jones

Perhaps one of the most harrowing, frustrating jobs in existence today is that of association secretary. He has not one boss, but a hundred or more.

Moreover, each of these bosses is used to getting his own way. Obviously, when they sit around an association conference table, there will be clashes and conflicts of opinion. The agony is compounded by the fact that many of the members are competing against one another.

To secure an agreement for a program designed to elevate the industry's stature is a delicate and difficult thing at best. Too often such a program for the general welfare may put a particular member at a competitive disadvantage—or so he thinks.

In our book, accomplishments of the ARI to date are praiseworthy, indeed. Much of the credit belongs to Managing Director George Jones. Here is a man with infinite patience, immense charm, and an extraordinary capacity to disarm critics. Frequently he achieves the impossible. Miracles take longer.

#### New Cadillac Accessory

That \$12,500 Cadillac Brougham is equipped with so many advanced automatic de-

## Govt., Industry Builders Hear of 'Tricks' To Provide Heating and Cooling In Homes To Meet on Air Conditioning

By George M. Hanning

WASHINGTON, D. C.—A Government-Industry symposium on general air conditioning applications will be held in Washington early in April, it was announced following a meeting of a Government-Industry committee named in December to make arrangements for such a session.

Decision as to whether the symposium will cover two or three days of meetings was deferred until after a subcommittee on agenda and speakers makes its report later in January. It is now tentatively scheduled for April 3, 4, and 5 in the Commerce Department Auditorium.

The symposium was proposed by the Commercial and Indust-

(Concluded on Back Page, Col. 1)

### TOT Ups Sales, Adds New Towers

HOUSTON, Texas—The complete reorganization of its sales department to meet increasing demand, and the addition of a new line of towers, has been announced by TOT Towers here, manufacturer of mechanical and atmospheric cooling towers.

"TOT sales have increased steadily since it began manufacturing towers more than 20 years ago," Vice President Max R. Kerr declared, "and sales in 1956 were up 25% over the previous year. By providing a line to handle all tower needs—from two to 125 tons—we expect to triple sales during 1957."

Kerr announced the promotion of W. C. (Andy) Andereck to the post of National Sales Manager, heading the reorganized sales force. Andereck, chairman of the cooling tower section of the Air-Conditioning & Refrigeration Institute, has 11 years' experience in the field, six of those with the Marley Co. He has been with TOT Towers four years.

(Concluded on Back Page, Col. 1)

### Betz Ups Keller, Carvell In Sales

DANVILLE, Ill.—Frank C. Hawk, general manager of the Betz Div. of Bohn Aluminum & Brass Corp., has announced two sales appointments and a corresponding realignment in the sales structure.

The division manufactures air conditioning and refrigeration equipment. Sales activity will now be directed into: heat transfer products for original equipment manufacturers application, industrial air conditioning, and commercial refrigeration through wholesale outlets.

(Concluded on Page 29, Col. 4)

CHICAGO—A long list of practical "do's" and "don'ts" for building air conditioned homes—some of which run counter to recent teachings of air conditioning manufacturers—were presented to builders convening here recently by Prof. John Watt of the University of Texas.

Prof. Watt based his recommendations on research made in the Austin Village project, the widely publicized air conditioning experiment at Austin, Texas in which he took part.

One recommendation that drew protests from air conditioning men in his audience was his advice against using fans to ventilate attics.

He contended that they did not do enough good to be practical. He said that in the Austin Village homes equipped with attic ventilating fans, neither by feel or by instrument could the researchers tell whether the fans were operating or not.

He argued that the temperature in the attic space was no criterion of the heat being trans-

mited down through the ceiling. He pointed out, and the air conditioning engineers agreed, that ventilating the attic had no effect on the radiant heat passing through the attic.

Consulting Engineer Jack Kice, formerly with Coleman Co., and James Horton of Carrier Corp. both disagreed vocal-

(Concluded on Page 29, Col. 1)

### Frigidaire Loses Tax Refund Claim

WASHINGTON, D. C.—A victory for the Government and defeat for companies which want a tax refund for money spent providing parts and service under repair and replacement warranties is the result of the Court of Claims practically "overturning" its two earlier rulings in the so-called Frigidaire cases.

This latest decision, like the two earlier ones, involved warranty plans offered by Frigid-

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#### Grocers Hear

### New Refrigerated Display Cases Offer More Frozen Food Storage

HOUSTON, Texas—Narrow sizeable amount toward the cost of the equipment.

Celli asserted that frozen food cases with bottom storage actually waste space. The space would better be used, he said, by devoting it to more display stock. "Bottom storage is obsolete," Celli told the workshop members. "Put all your frozen foods on display and sell more."

Grocers who do not need a large back-room reserve of frozen food should consider the total cubic feet of storage in a refrigerated case rather than the total area, Celli said.

A new design 4 ft. square takes up less room than a walk-in storage box 8 ft. by 6 ft., he pointed out. Yet it actually has

(Concluded on Back Page, Col. 4)

## Heating and Cooling Show Opens Feb. 25

### 500 Firms May Exhibit at Chicago Amphitheater

CHICAGO—The 13th International Heating & Air Conditioning Exposition, to be held Feb. 25 to March 1 at the International Amphitheater here, promises to be the largest in the history of the event, according to the Exposition management.

The Exposition is under the sponsorship of The American Society of Heating & Air Conditioning Engineers, which will hold meetings in the Conrad Hilton hotel part of the same week. Active management of the Show is by the International Exposition Co., 480 Lexington Ave., New York City, headed by E. K. Stevens, manager.

Nearly 500 displays will occupy all the available space on the first floor of the Amphi-

(Concluded on Back Page, Col. 3)

### Cobell Sale Won't Halt Cooling Mfg.

FORT WORTH, Texas—Sale of Cobell Industries, Texas manufacturer of air conditioning equipment, has been announced at the Fort Worth plant.

New owners and operators of the company are a group of Cleburne, Texas, businessmen headed by R. E. Roberts, president of Roberts Mfg. Co. of Cleburne, nationwide distributor of range hoods.

Other officers of the new operations are Harold B. Bailey, Jr., partner in Bailey & Co., Cleburne building materials company, and Paul Ashley, secretary-treasurer.

Bailey says the company will continue to be active in the air conditioning equipment field.

### B-W Consolidates Hydraline In York

CHICAGO—Borg-Warner Corp. announced that it has consolidated its Hydraline Products Div. in Detroit with its recently-acquired York Div. in York, Pa.

The two divisions manufacture related products. Hydraline produces forced-water air conditioning systems and recessed room heating, cooling, and air filtering units. York is a nationally-known manufacturer of air conditioning and refrigeration equipment.

Under the consolidation, York will expand its manufacturing program to include a new line of York-Hydraline air conditioning products. These will be marketed through the present Hydraline distribution system, serving pri-

(Concluded on Page 29, Col. 4)

## Stucky Elected NARDA President; Price Named Chief of Executive Committee

CHICAGO—Ken Stucky of mittee, a new position. Members Stucky Bros., Fort Wayne, Ind., of this committee will be officers was elected president of the and Gabbert, Harold A. Witham, National Appliance & Radio-TV Witham's, Bakersfield, Calif., Dealers Association at the and Al Robertson, Oklahoma group's annual convention held City.

here recently. He succeeds Don Gabbert, Gabbert's, Minneapolis.

Stucky is a veteran in NARDA activities. He was a director in the early days of the association, vice president in 1948, treasurer from 1949 through 1954, and was elected a director again in 1955. In addition, he headed a committee that developed NARDA's Uniform System of Accounting.

Mort Farr, Upper Darby, Pa., continues as chairman of the board. H. B. Price, Jr., Price's, Inc., Norfolk, Va., was elected chairman of the executive com-

Steve Feinstein of Magee's, Inc., Boston, was elected a vice president, and Tom Carmichael, Burns & Carmichael, Seattle, Wash., and Joseph Fleischaker, Wills Sales Appliance Stores, Louisville, Ky., were re-elected vice presidents.

Also re-elected were Secretary John K. Mooney, Broyles Electric Co., Marion, Ind., and Treasurer Victor P. Joerndt, Joerndt & Ventura, Kenosha, Wis.

Newly-named to the board of directors are: Glenn Flinn, Glenn Flinn, Inc., Tyler, Texas; Stuart Greenley, Greenley's,

Flint, Mich.; Carroll McMullin, DeVaux Television & Appliances, Toledo; Sam Singer, Schweig Engel Co., St. Louis; Frank Pieratt, Pieratt's, Lexington, Ky.; W. H. Sharpe, Sharpe's Appliance Co., Atlanta; and R. V. Finch, Home Appliance Co., Medford, Ore.

A. W. Bernsohn, managing director, was given the new title of executive vice president.

### Western Plant Maintenance Conference To Open June 11

SAN FRANCISCO—The third Western Plant Maintenance and Engineering Show and Conference will open at Civic Auditorium here June 11, 1957, it was announced.

Clapp & Poliak, producer of the three-day show, stated exhibit space may be secured through either the firm's New York City office at 341 Madison Ave., or at the office here at 681 Market St.

### Customer Remains In Car

## Plans To Add Fresh Meats to Frozen, In Drive-Through Store

HOUSTON, Texas—A drive-through grocery where customers may shop without getting out of the car has been judged "a success" here.

Introduced in nearby Bellaire by Herbert H. Blankenship after much secrecy during building,

eventually to have a chain ring-

ing metropolitan Houston.

He said he expected each unit

to do a minimum volume of about \$7,000, or about \$365,000

a year.

Unlike the usual square drive-in grocery store, the Drive-Thru is a long, rectangular building with shelves of groceries on the outside facing asphalt driveways on both sides. The motorist, following arrows, drives into the shopping lane where a basket with hooks is attached to his car door.

As the car moves along slowly, a store attendant follows, getting from the shelves what the customer points out and putting it in the basket. At the same time, the attendant

turns a tiny calculator attached to the basket showing the customer a running total of the purchases.

When the customer gets to the end of the line, he pays to the cashier stationed at a checkout stand.

Shelves of stock are inclined so that as one item is removed another drops into its place. Stockmen work inside filling the backs of shelves. Store's inside is used only as a work area and warehouse.

Each driving lane is double width so a motorist can pull in front of someone who is taking too much time. A wide canopy has been built on both sides to protect customers' cars, according to the announcement.

### Gibson To Close Pittsburgh Factory Branch, Names Outlet

GREENVILLE, Mich.—Gibson Refrigerator Co. will close its factory branch in Pittsburgh on Feb. 1, according to W. C. Conley, vice president in charge of Gibson sales.

At the same time, Conley announced the appointment of an independent Pittsburgh firm, C. R. Rogers Corp., as the Gibson distributor for 26 counties in Pennsylvania, two counties in West Virginia, and one each in Maryland and Ohio.

Conley said Gibson's association with the Pittsburgh company "would result in added convenience and accommodation to Gibson dealers in this area." Robert T. Des Rosiers, Gibson's branch manager in Pittsburgh, will be transferred to a key position in Gibson's field organization.

### Smith Heads New State Of ARW Region 6 Officers

MILWAUKEE—D. J. Smith, Vincent Refrigeration and Heating here, recently was elected chairman of Air-Conditioning & Refrigeration Wholesalers Region 6 for 1957, it was announced.

Also elected to serve with Smith were Harry Jessell of Gustave A. Larson Co. here, secretary, and James Alter, the Harry Alter Co., Chicago, treasurer.

Annual summer meeting will be held in June at Nippersink Manor, Nippersink, Wis., it was added.

let's  
talk  
cents

When you buy a low temperature system, check the TOTAL costs of all components required for both the low side and the high side and you'll discover that the

**KRAMER**



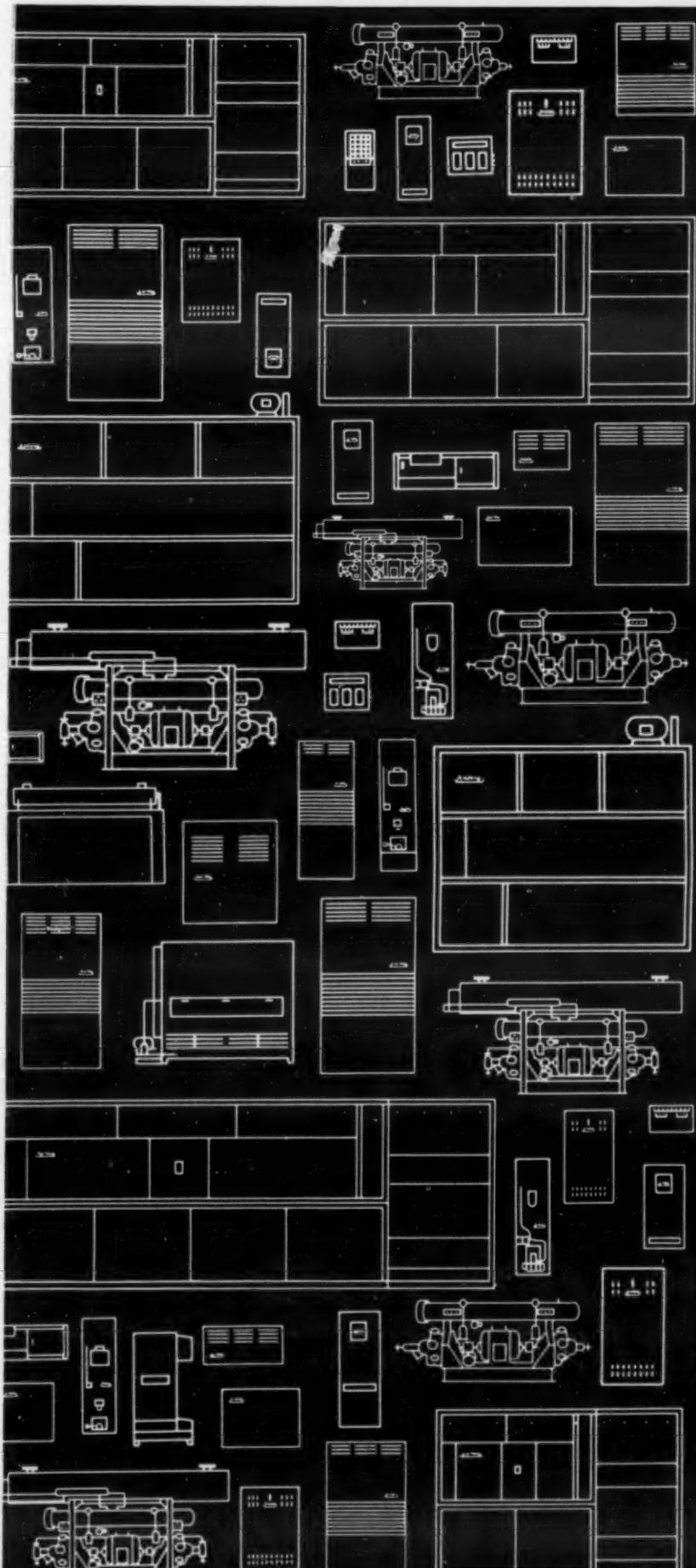
**THERMOBANK**

costs no more—but gives you so much more. Only the KRAMER THERMOBANK keeps liquid refrigerant out of the compressor. THERMOBANK provides the only positive re-evaporator system that supplies ample heat. THERMOBANK protects your compressor from damage and failure.

WRITE FOR MANUAL TV-320

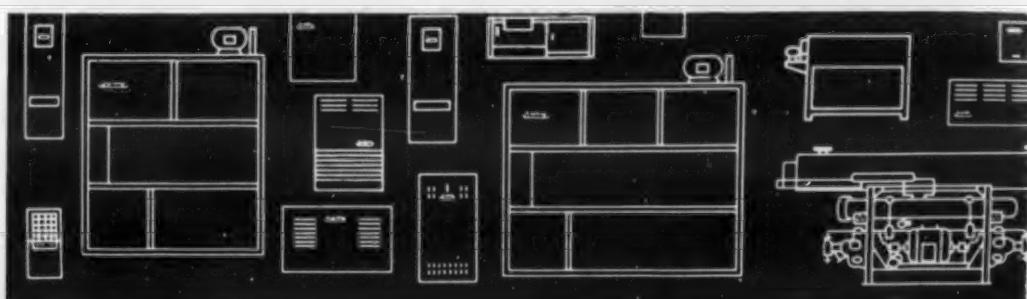
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Trenton 5, N.J.**

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with **CHRYSLER**



**YOU, TOO...**

can join the sweep forward! Mail  
this coupon today for details on  
Airtemp franchise opportunities!



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knocks **286** different ways  
for **AIRTEMP DEALERS**

**286 models**—the most complete selection in the industry—enable AIRTEMP dealers to meet every home and business need.

Whether your customer wants superbly engineered heating or cooling—central systems...waterless or water-cooled "packaged" cooling...room air conditioners...furnaces alone or cooling added to present furnaces—Airtemp dealers have *Chrysler-engineered* equipment with which to make the sale!

*The BIGGEST LINE in the industry...*  
*Now Backed by the*  
**BIGGEST AIRTEMP MERCHANDISING EVER!**

Big full-page, *full-schedule* advertising in the top magazines! *PLUS* important, new prospect-getting campaigns—special promotions—and a whole array of other tested merchandising aids.



*A Specialized Division of  
CHRYSLER CORPORATION,  
Devoted Exclusively to  
AIR CONDITIONING*

**AIRTEMP DIVISION, Chrysler Corporation**  
Dayton 1, Ohio

Gentlemen: Please rush full information on the Airtemp franchise!

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ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_

ZONE \_\_\_\_\_ STATE \_\_\_\_\_

## 60% of ARI Exposition Space Sold; Give Consideration to Coast Show in 1958

WASHINGTON, D. C.—More than 60% of the exhibit space available for the Tenth Exposition of the Air-Conditioning and Refrigeration Industry in Chicago next November has been sold to member-companies of the Air-Conditioning & Refrigeration Institute, sponsor of the show, it was announced this week by R. H. Israel, exposition committee chairman, following a committee session at which spaces were assigned to the exhibits.

"This is far ahead of any previous exposition, and indicates that this will be the largest and most important show of its kind ever held," Israel said.

Dates for the exposition, to be staged in Chicago's mammoth International Amphitheatre,

are Nov. 18, 19, 20, and 21, 1957.

Space is now being offered to non-ARI members who have exhibited in previous expositions, and will be offered for general sale early in March.

Meanwhile, the growing importance of the West Coast both as a manufacturing center and as a growing market for refrigeration and air conditioning products, led the exposition committee of ARI to recommend to the board of directors of the institute that every consideration be given to staging a national trade show on the West Coast sometime in 1958 under sponsorship and management of ARI.

In its discussions of a West Coast show, the exposition committee also considered the

swelling population of that area and the impracticability of exhibiting at an eastern show faced by many Pacific region manufacturers, as well as the inability of many visitors from that section to attend the shows at Chicago or Atlantic City.

In addition to the 10th Exposition of ARI now scheduled in Chicago, another show is scheduled for November of 1959 at Atlantic City.

### Frigidaire Branch Mgr., W. I. Buchanan Dies

SAN FRANCISCO — William I. Buchanan, manager of the Oakland branch of Frigidaire Sales Corp., died recently after a three-month illness. He was 59.

He was associated with Frigidaire for the last 29 years, coming to San Francisco in 1947 as the organization's regional manager. He became branch manager in Oakland in 1955.

### New York City Code

## Air Conditioner Use Causes Changes To Modernize Electrical Wiring Laws

NEW YORK CITY—Increasing popularity of air conditioning and other modern electrical appliances has made it necessary for this city to revise its laws on installation of electrical wiring, it was reported.

The new code would apply to new and remodeled buildings only.

Under the new setup, air conditioners could be installed in living room, dining room, and bedroom of any apartment or house without overloading the circuit because a provision stipulates there must be separate three-pole 20-amp appliance branch circuits in each of these three rooms.

Most existing New York City apartment house lines have

difficulty carrying even one air conditioner per apartment, it was noted. But newer buildings have generally made provision for the units.

Designed to head off disastrous overloading of electrical circuits, the new electrical code is intended to bring wiring requirements abreast of modern times. It provides for greater electrical capacity in apartment houses, private residences, offices, and commercial establishments.

Two basic legislative bills embracing scores of amendments to the city's Administrative Code were unanimously adopted by City Council. After a hearing before the Board of Estimate, where approval is regarded as certain, and signature by the mayor, the provisions take effect, it was added.

Taken together, the new bills seek to compel property owners to provide sufficient electrical safety measures in all types of new and remodeled buildings. However, city officials emphasized the legal revisions would not be retroactive.

In the kitchen, the new code would require that, except for the electric clock, everything must be on an appliance circuit of not less than 15 amps. This would permit the homemaker to use a refrigerator, toaster, electric skillet, and electric mixer at the same time, it was explained.

An increase in fees for electricians' licenses to \$250 for both new licenses and renewals is provided in the legislation. At present the city charges \$150 for a new master or special electricians license, and \$100 for each renewal.

### FHA Says 'Unwise' To Ban Appliances In Mortgages

WASHINGTON, D. C.—The Federal Housing Administration went on record as opposed to any legislative ban on the inclusion of appliances under FHA mortgages.

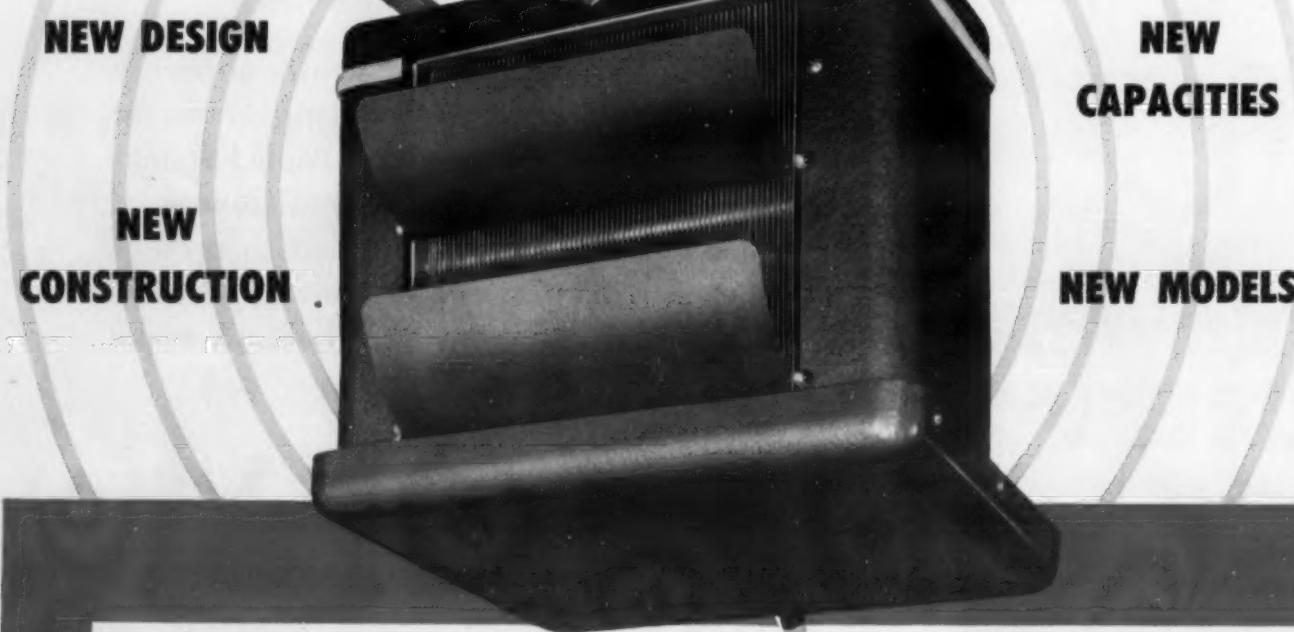
Norman P. Mason, FHA commissioner, told the Senate Banking committee that legislation to limit items under FHA mortgages would be unwise and would reduce the effectiveness of FHA programs.

He said such a legislative ban would not change the practice of homeowners buying appliances and other items, but only would force them to use conventional and more expensive financing where no limitations existed.

FHA emphasized that its local insuring officers exercise their judgment in deciding whether items should be included in mortgages.

Mason stated that 10 FHA offices refuse to include ranges, 57 do not include air conditioning units, and local custom rules in all cases.

A survey by FHA showed that consumers overwhelmingly favor inclusion of equipment in the FHA mortgages, although not all agree on what specific items should be financed.



## THE GREATLY IMPROVED LARKIN HUMI-TEMP LINE

Now the world famous line of standard Larkin Humi-Temp units is better than ever—which is saying a lot, because they have been the accepted standard throughout the industry for years!

**New Capacities**—Ratings from 2,500 to 48,000 BTU/HR to more nearly balance compressors. Model numbers now designate capacity.

**New Construction**—to provide a sturdier unit with even greater endurance and accessibility to moving parts.

**New Models**—eleven in all, including the husky MT-320 with a capacity of 32,000 BTU/HR at 10° TD and only two fans.

**New Styling**—modern streamlined lines blend with Larkin's own blue enamel to make a truly handsome unit.

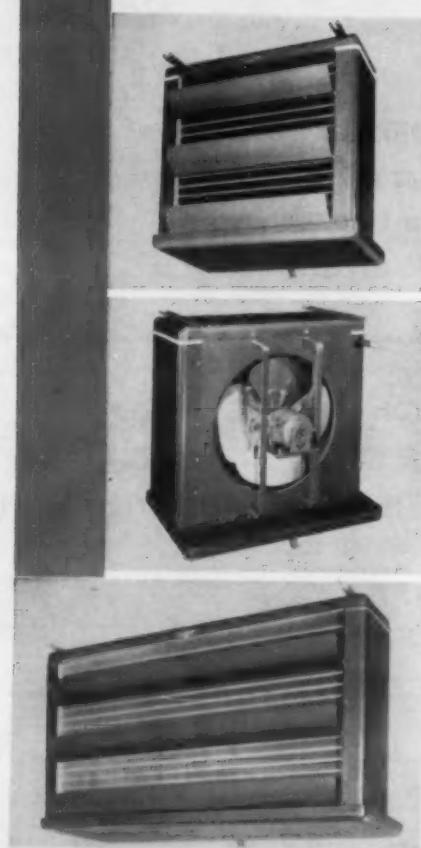
**Fully Featured**—original, high-efficiency cross-fin coil with staggered tubing . . . heavily insulated non-sweat drip pan . . . rustproof aluminum case . . . airplane-type vibrationless fasteners . . . adjustable louvers . . . slotted hangar bars . . . plus the in-built quality that naturally goes with the name Larkin.

Get complete details from your wholesaler or write for bulletin 1049-A.

**"Originators of the Cross Fin Coil"**

**LARKIN COILS INC.**

519 MEMORIAL DRIVE, S.E. • ATLANTA, GEORGIA • MURRAY 8-3171



Year-Round System at \$1 Per Sq. Ft.

## 'Ridge Roof' Designed To Reduce Cooling Costs In 'Composite House' In Miami

MIAMI, Fla.—Year-round air conditioning for \$1 per sq. ft. of space at retail value will be achieved in the "Composite House" now under construction in suburban North Miami, according to A. J. L. Moritz, general manager of Air Conditioning Distributors here.

This feat will be made possible through special design features that will place the heating and cooling unit in the center of the house and will greatly reduce the cooling load, Moritz explained.

The Composite House is intended to be a showplace for new home features promoted jointly by the manufacturers of the products used and the developer, San Souci Estates.

It is being constructed on a 60-acre plot of new filled-in land on the shore of Biscayne Bay about 10 miles north of downtown Miami. It will be in full view of traffic along U. S. 1 and visible from luxury ocean-front hotels across the bay.

Expected to be ready for public inspection by Feb. 15, the house will remain open to the public for one year and then sold, according to Moritz. The house is valued at \$34,000, including a \$11,500 lot. Eventually it will be part of a new 140-lot subdivision of \$30,000-plus homes.

### Function of 'Ridge Roof' Described

One unusual feature of the house will be a "ridge roof." The ridge roof is a long narrow strip roof raised a few inches over the peak of the house roof. The section of the house roof beneath the ridge roof—it covers the central half of the roof—is open.

There are also openings beneath the eaves, Moritz explained. Thus outside air will be drawn in beneath the eaves and allowed to escape from beneath the ridge roof.

This natural circulation is expected to keep the temperature in the attic space at 95° F. or less no matter what the outside temperature may become. It should give a complete change of air in the attic every eight minutes without the aid of a circulating fan, he said.

### System Oversized for Additional Air Movement

The 2,200-sq. ft. cement block one-story house will be cooled by a 3-ton Airtemp system. Actual load will be only 2½ tons, but the additional size is needed to get sufficient air movement, Moritz declared.

Air will be distributed through high side wall outlets generally, but with ceiling outlets in a few locations. In rooms with high side wall outlets, return air will be through low wall registers placed on the outside wall.

Also helping to keep the cooling load down will be 4 in. of Owens-Corning insulation in the ceiling and "Reflectal" insulation in the walls.

The building is being so



"RIDGE ROOF" along peak of house roof is feature of Composite House being constructed near Miami, Fla. Air drawn in under eaves and exhausted through openings under ridge roof is expected to keep attic temperature from ever rising above 95° F.

orientated on the lot and tect Walter Baggeson, augmented with sufficient roof mented the design for the Flori-overhang that the sun will never da market. His was the idea for shine directly into the living the ridge roof, Moritz said. space. This despite the fact that The air conditioning and heat-ing system is being installed by

The Composite House was Miami Air Conditioning Co., a basically designed by Henry local Airtemp dealer. Wright. However, Miami Archi- Plans are to give the Com-

posite House national publicity, as basically the design can be applied in any section of the country, Moritz said. With Miami being the national magnet that it is, he expects some 200,000 to 300,000 people from all over the nation to inspect the house.

A heavy program of advertising and promotion in local newspapers, local radio and TV, billboards, spectaculars, and national "shelter" magazines is in preparation, the official commented.

Other features planned for inclusion in the Composite House include an all-electric kitchen, it was stated.

### Charter Cooling Firm

TOPEKA, Kan.—Air Conditioning Supply Co., Inc., Salina, has been granted a charter. Authorized capital stock: \$150,000. B. B. Gage was listed as resident agent.

### Arizona Contractors Elect Paul Schoonover

PHOENIX, Ariz.—The Air Conditioning Contractors of Arizona have elected Paul Schoonover as their 1957 president.

Other new officers and members of the board are Howard Kraft, vice president; Jim Scott, secretary-treasurer; Paul Johnson and Robert Bayless, board members; William Goetti, board member ex-officio; and Dick Duffy, executive secretary.

### Kenneth Young Dies

SAN DIEGO, Calif.—Kenneth H. Young, 56, co-owner of West Coast York Co., died recently in his home in Mission Hills.

He was a past president of the San Diego chapter of Refrigeration Service Engineers Society and was elected sergeant-at-arms of the international.

# YORK Self Contained Air Conditioners now Come in 6 Sizes!



### Go after the rich "multiple space" market with the most complete, feature-packed line!

Whether your prospect is a medium-sized store or a multi-story office building, you're a cinch to close the sale with York! Six of the finest self-contained units built offer a choice of single compressor models in 3, 5 and 7½ H.P.—double and even triple compressors with Step-Matic Controls that "cut-in" each cooling circuit as needed for top operating economy in the 10, 15 and 22½ H.P. units! All models whisper-quiet, vibration-free. No special foundations required—installations are so simple, your client can invariably conduct "business as usual" while they're being made! And remember! The York 5-Year Protection Plan on cooling circuits means your initial profits won't be dissipated on extensive service calls later! Contact your York distributor today!



Your FUTURE and FORTUNE Now Lies With York!

YORK CORPORATION, YORK, PA., Subsidiary of Borg-Warner



## Industrial Applications

### Package Chillers Help Halt Rusting of Pneumatic Tools, Air Powered Presses

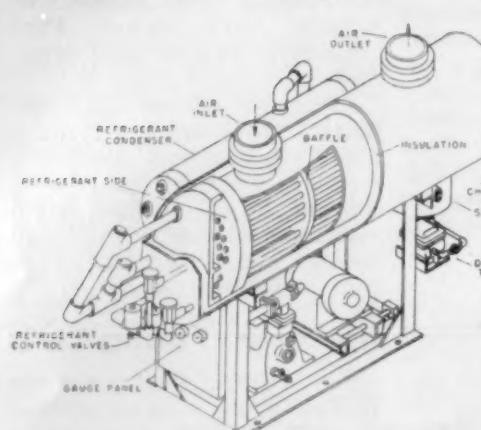


DIAGRAM shows how air enters the packaged chiller by way of the air inlet where it is then circulated through the unit by means of baffles.

HARRISON, N. J.—Prevention of rusting of pneumatic tools, air-powered presses, dehumidified air leaves the chiller through the air outlet, and tools is said to have been accomplished through use of packaged air chillers.

Worthington Corp. reported it had installed packaged chillers in the press and stamping plants of General Motors Corp., Chrysler Corp., and Ford Motor Co. to reduce moisture content of compressed air.

#### MAINTENANCE LESSENED, TOOL LIFE INCREASED

Maintenance is lessened and tool life increased by use of quality dehumidified air, it was claimed. Other industries, such as the Aluminum Co. of America and Barium Reduction Corp. also used the Worthington chiller to reduce possibility of rust in making their products, the manufacturer further stated.

#### COMPLETE SYSTEM

The Worthington packaged air chiller is a complete refrigeration system consisting of a compressor, motor, condenser, expansion valve, and chiller. As shown in the diagram, the air enters the chiller by the way of the air inlet where it is then circulated through the chiller by means of baffles.

As the air is refrigerated, moisture vapor is condensed and



265 to 1400  
BTU/hr.  
-1° T.D.



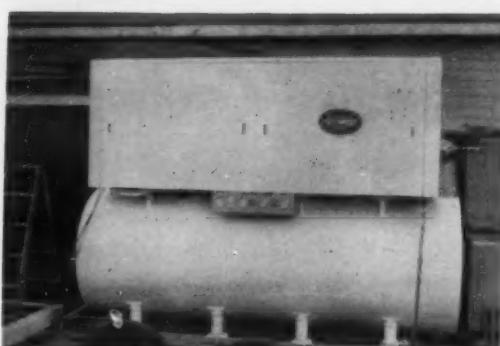
#### LOW PRICED BUC KRACK UNIT COOLER

Here is the long awaited answer to the need for a dependable low priced unit cooler for general application!

Send Today for New Detailed Bulletin BUC 455!

612  
Pioneers In  
Refrigeration  
And Air  
Conditioning  
Since 1931.  
901 W. Lake St., Chicago 7, Ill.

Air Conditioning & Refrigeration News, January 28, 1957



REFRIGERATED cooler for liquid sugar is claimed to be largest in world. It was made by Lockwood Equipment Co.

### Refrigerated Cooler Can Chill 4,000 Lbs. of Liquid Sugar an Hr.

PEEKSKILL, N. Y.—Lockwood Equipment Corp. here has recently manufactured and delivered what the company believes to be the largest refrigerated cooler for liquid sugar in the world.

The cooler, which was installed in the plant of the Burry

Biscuit Co. in Elizabeth, N. J., has the capacity to chill 4,000 lbs. of liquid sugar per hour.

By chilling liquid sugar, the biscuit and cake bakeries are able to obtain a lighter and fluffier cookie and cake, the company explained.

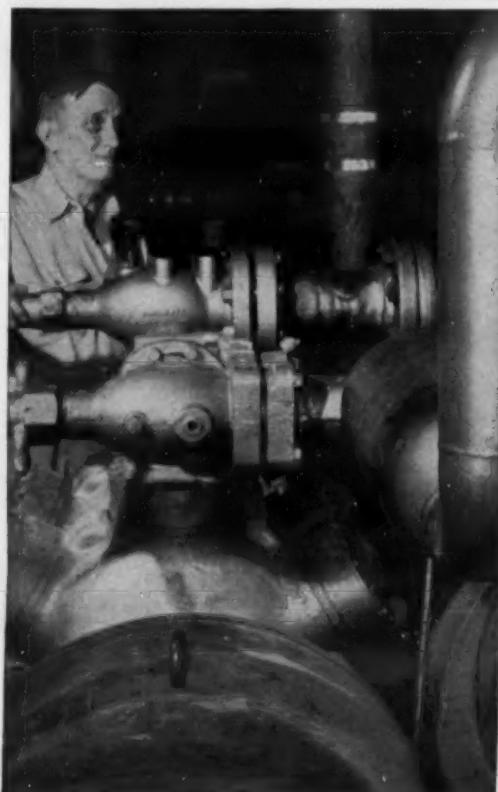
Lockwood claims to be the ed.

first and only manufacturer of this type of equipment in the country. It said it has made a number of 3-ton capacity coolers for Refined Syrups & Sugars, Inc. of Yonkers, the largest sole producers of liquid sugar in the east.

Liquid sugar is sold to food manufacturers for use in making ice cream, candies, soft drinks, jellies, jams, baked goods, and apple sauce.

#### Air Conditioned Electronics Plant To Rise In Sarasota

SARASOTA, Fla.—The Sarasota contracting firm of Debree & McGrath has been awarded a \$307,000 contract for a building to house the area's first major industry, an electronics firm. Completely air conditioned, the new plant will be operated by Electro-Mechanical Research, Inc., the contractor explain-



ABOVE: Two 100-ton Carrier refrigerating units make up the heart of the cooling system at Production Center. With air conditioning, costly filming operations can proceed at top speed even under the intense heat of lights.



### Freon-22\* in twin 100-ton units cools air for delivery through soundproofed ducts at Production Center, N.Y.C.

At Production Center, New York City—the world's only completely air conditioned movie and TV studio—effective performance of the cooling system is due in part to its charge of Du Pont "Freon" refrigerant. For any air conditioning system, no component is more important than the refrigerant used. That's why you should always use "Freon" in the jobs you do.

"Freon" refrigerants have been proved by years of trouble-free performance in all types of air conditioning and refrigeration installations.

Acid-free, dry and safe—"Freon" refrigerants are backed by more than 26 years of Du Pont technical and marketing leadership. And "Freon" is available when you need it from your complete air conditioning and refrigeration wholesaler.

Send for more information or technical data on uses of "Freon". Write to E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division 11, Wilmington 98, Delaware.



# FREON

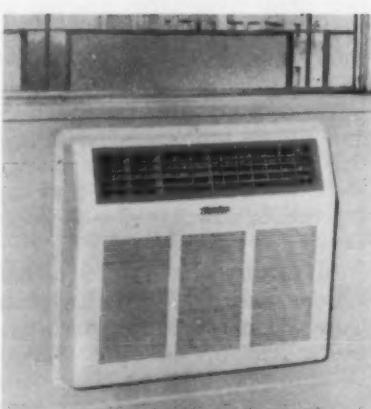
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

## Hunter Adds Thin-Styed Room Unit For In-Wall Use with No Overhang

MEMPHIS—Hunter Div. of Robbins & Myers, Inc. has announced the addition of a new thin-styled "Regent" air conditioning unit "that fits all in the wall with no unsightly overhang."

This gives the Memphis firm a complete line of room air conditioners, including models for conventional double hung windows and casement type windows.

The Regent is available in  $\frac{1}{2}$ ,  $\frac{3}{4}$ , and 1-hp. sizes. According to Keith Spurrier, sales manager of the Ventilating Div. of Hunter, the new model is designed primarily for the multiple housing market. "It has many advantages for the apartment house or motel type of so, he simply shuts the unit off.



construction," he commented.

With individual units, he stated, "the tenant selects and maintains his own control. If he leaves home for a week or

## Sears Offers 'Slenderette' Unit In $\frac{3}{4}$ , 1-Hp. Models 17 $\frac{3}{4}$ -In Deep

CHICAGO—Sears Roebuck & Co. has added a "Slenderette" priced at \$419.95, the company series to its 1957 room air conditioner line in  $\frac{3}{4}$  and 1-hp. models 17 $\frac{3}{4}$  in. deep.

Generally room unit prices are the same or \$5 to \$10 higher in the good and better series than a year ago. No orders will be taken on the Slenderette 1 $\frac{1}{2}$ -hp. unit (19 $\frac{1}{8}$  in. deep) until Feb. 28, it was noted.

There are nine "Coldspot" refrigerator models, as before, but sizes are larger, up to 15.2 cu. ft. for the upside-down refrigerator-freezer, and prices are generally higher by about \$5 to \$10 on comparable models.

The 15.2-cu. ft. combination is a two-door, has squared lines, comes in three colors and white, includes 10.4 cu. ft. of refriger-

ator space at bottom, and is a 9.2-cu. ft. refrigerator at top, and 134-lb. freezer at bottom, and an 11.2-cu. ft. one-door model at \$299.95 with 9-cu. ft. refrigerator and 79-lb. freezer on top, it was explained.

Other models range from a 12.5-cu. ft., two-door unit at \$324.95 to a 7.7-cu. ft. unit at \$159.95. Largest model in the previous series was a 14-cu. ft. upside-down combination at \$379.95.

There are 10 food freezers for 1957 compared with seven previously. This year there are six chests and four uprights.



"SLENDERLINE" room air conditioner made by King Refrigerator Co. measures 16 $\frac{1}{2}$  in. deep.

## Dealers, Distributors To Handle King Room Units

GLENDALE, L. I., N. Y.—Reporting that distribution of King Refrigerator Corp.'s new room air conditioner line will be through appliance dealers and distributors, M. Herbert Koepel, president, said that in addition, the company has set up a contract manufacturing department to handle private brand production for other appliance manufacturers and syndicate buyers.

The "slenderline" air conditioner, which measures 16 $\frac{1}{2}$  in. deep, can be mounted in upper or lower sash of double-hung windows, flush with the wall; in casement windows with "no cutting of metal sash," all inside or outside the room with windows operating; and through-the-wall, flush inside or outside, the company said.

Available in two sizes (as reported earlier in the NEWS), the unit is finished in beige and brown with gold accents. It comes in  $\frac{3}{4}$ -hp., 115-v. (including a 7 $\frac{1}{2}$ -amp model), and in 1-hp., 115 or 230-v. sizes.

### Conditioner Registration Required In Wymore, Neb.

WYMORE, Neb.—An ordinance passed by the City Council requires all air conditioner owners in Wymore to register such units with the City Water & Light Dept.

The ordinance also requires registration of all new air conditioners before they are put into service.

Increase in power demand was given as the reason for the ordinance. The load was particularly heavy last summer, it was said, when there was a sharp increase in the number of business establishments and homes installing air conditioning.

### Airtemp Room Conditioner Sales Meetings Started

DAYTON—Commencing Jan. 23, Airtemp Div. of Chrysler Corp. began a nationwide series of distributor-dealer room air conditioner meetings through its regional offices.

At the meetings, Airtemp will debut its new "DANDY DOZEN—plus ONE" 1957 line of room air conditioners, announce room unit promotion plans for the year, and introduce the company's '57 array of new merchandising materials.

Meetings have been scheduled for 20 prime market areas. It is expected that all major cities will become meeting sites. In some sections, however, the introductory sessions will be held at later dates.

# condition a movie studio



ABOVE: Major design problem in air conditioning Production Center was noiseless delivery of conditioned air to the filming area. To absorb fan sound, all branch ducts, roof plenums and low-velocity delivery ducts have sound-absorbing glass-fiber linings 2" to 4" thick. Telescoping ducts can be adjusted in height from 14' to 22' off the floor.



## REFRIGERANTS

*\*"Freon" is Du Pont's registered trademark for its fluorinated hydrocarbon refrigerants.*



For more information about products advertised on this page use Information Center, page 20.

## Inside Dope

By GEORGE F. TAUBENECK

(Concluded from Page 1, Col. 1) vices that it practically drives itself.

However, we bring you advance news of an accessory to be introduced later. This will be a button on the dashboard. When you press it, it presses back—and makes you feel needed.

### Ingenious Cooling

To pre-cool the jet fuel in some of our nation's latest fighter planes, a sort of "moonshiner's still" is in service. This so-called "still" consists of a round barrel 6 ft. deep, with coiled pipes inside. Cakes of dry ice are dropped into this barrel, along with the jet fuel, to cool the solution to near freezing. The fuel itself is pumped into the coiled pipes inside the barrel.

Aircraft industry engineers have discovered pre-cooled fuel will permit more pounds of the stuff to be stored in an airplane's tanks. Between 6% and

10% more pounds of fuel can be carried in this manner, although the total number of gallons in the tanks remains the same.

Jet fuel, you see, shrinks as it cools.

### Out of Our Mailbag

Gibson Refrigerator Co.  
Greenville, Michigan

#### "Inside Dope":

Bill Conley, vice president in charge of Gibson sales, sent the attached wire to Miss Ramsey inviting her to visit our plant. After reading the wire you can see what embarrassment one letter of the alphabet can cause.

Those who are acquainted with Edith know she is physically attractive and the word could very well fit. Results were on the humorous side and no one was offended.

Thought you'd like this for your column.

F. H. FISHER, Manager,  
Advertising & Sales Promotion

Greenville, Michigan

C. J. Gibson, Jr., our president, S. E. Sweet, executive vice president, and H. E. Rosebrook, vice president in charge of engi-

neering would appreciate your presence one day during week of Dec. 24 purpose to review the coldest place imaginable to program I previously outlined to a hot place can probably be answered when one realizes the fact that civilization started in the tropical regions and, under those conditions, it was felt that cold was the thing to be avoided.

Later man invented fire and conquered the problem of cold, and this possibly caused the change in thinking to the point that the Inferno is now a place of great heat.

BILL CONLEY

National-U. S. Radiator Corp.  
Greenville, Illinois  
Editor:

Here's one.

Feel like I had been ironing all day in a tight corset with a cold iron.

O. J. DAIL

Robert S. Taylor  
1612 Southeast Blvd.  
Evansville 14, Indiana

Editor:

With reference to Mr. Bijur's letter appearing in your Jan. 7 issue, the first time I heard the phrase "grinning like a jackass eating thistles" was many years ago. My brother-in-law, O. T. Olson, who is divisional freight agent for the Southern Pacific Railroad in Austin, Texas, has used this colorful expression for many, many years.

Mr. Bijur's problem as to Peter dazed and bewildered. Before the venerable Saint could recover, the lawyer quickly handed him a writ of mandamus, pushed him aside, and strode through the open portals.

Next came the doctor. With impressive, dignified bearing, he introduced himself: "I am Dr. Brown. St. Peter received him cordially. "I feel I know you, Dr. Brown. Many who preceded you, said you sent them here before their time. Welcome to our city."

The engineer, modest and diffident, had been standing in the background. He now stepped forward. "I am looking for a job," he said. St. Peter wearily shook his head. "I am sorry," he replied, "we have no work here for you. If you want a job you can go to Hell."

This response sounded familiar to the engineer and made him feel more at home. "Very well," he said, "I have had hell all my life and I guess I can stand it better than the others."

St. Peter was puzzled. "Look here, young man, what are you?" "I am an engineer," was the reply. "Oh, yes," said St. Peter. "Do you belong to the Locomotive Brotherhood?"

"No, I am sorry," the engineer apologized, "I am a different kind of engineer."

"I do not understand," said St. Peter, "what on earth do you do?"

The engineer recalled a definition and calmly replied: "I apply mathematical principles to the control of natural forces." This sounded meaningless to St. Peter and his temper got the best of him. "Young man," he said, "you can go to Hell with your mathematical principles and try your hand on some of the natural forces there!"

"That suits me," responded the engineer. "I am always glad to go where there is a tough job to tackle." Whereupon he departed for the nether regions.

And it came to pass that strange reports began to reach St. Peter. The celestial denizens, who had amused themselves in the past by looking down upon the less fortunate creatures in the Inferno, commenced asking for transfers to that other domain.

The sounds of agony and suffering were stilled. Many new arrivals, after seeing both places, selected the nether regions for their permanent abode. Puzzled, St. Peter sent messengers to visit Hell and to report back to him. They returned, all excited, and reported to St. Peter:

"That engineer you sent down there," said the messengers, "has completely transformed the place so that you would not know it now. He has harnessed the fiery furnaces for light and power. He has cooled the entire place with artificial refrigeration. He has drained the lakes of brimstone and has filled the air with cool perfumed breezes. He has flung bridges across the bottomless abyss and has bored tunnels through obsidian cliffs. He has created paved streets, gardens, parks and playgrounds, lakes, rivers, and beautiful waterfalls."

"That engineer has gone through hell and has made of it a realm of happiness, peace, and industry."

## Do You Require Automotive Air Conditioning Units or Components?

**EATON Can Furnish the Following  
from Stock or on Short Notice:**

### COMPLETE SYSTEMS

Available to fit most popular makes of cars from 1954 through 1956. Engineered and designed for specific applications. All kits are complete, no extras to add. Eaton's own magnetic clutch is incorporated in all systems. Simplified under-hood installation.

### MAGNETIC COMPRESSOR DRIVE CLUTCHES

Engineered to fit most applications; compact design; peak torque factors; positive compressor cycling; 6 and 12 volt assemblies.

### COMPRESSOR and CLUTCH ASSEMBLIES

High capacity popular make automotive compressors assembled to Eaton magnetic clutch units. Prepared for immediate installation.

### CONDENSER COIL ASSEMBLIES

Single and double row coils; 1/2" S.A.E. inlet, 3/8" S.A.E. outlet fittings; furnished with end brackets for mounting; copper tubing and aluminum fin construction; maximum condensing capacities.

### EVAPORATOR COOLING UNITS

Adaptable to most cars and truck cabs; available in 6 and 12 volt models. Coils and fans enclosed in moulded plastic case. Full directional air flow control; variable fan speed control. All assemblies complete with expansion valves. Engineered for maximum cooling efficiency.

### CRANKSHAFT ADAPTER PULLEYS

Add-on type; A-section 1/2" belt grooves; engineered for proper fit. Adaptations for most cars.

### IDLER PULLEY ASSEMBLIES

Pulley diameter, 4"; belt groove, 1/2"; stamped steel construction; M.R.C. ball bearings; assembled with threaded stud.

As a pioneer and leading manufacturer in the automotive air conditioning field, Eaton Manufacturing Company has developed automotive air conditioning units with many outstanding features—including compactness, light weight, high cooling efficiency, and simple installation. These units have been performance-proven in thousands of vehicles. High volume production for the automotive industry makes possible very advantageous prices. Most of the above items are available immediately or on short notice. Let us know your requirements.

### HEATER DIVISION

**EATON MANUFACTURING COMPANY**  
65th AND CENTRAL • CLEVELAND 10, OHIO

For more information about products advertised on this page use Information Center, page 20.

**Commercial Refrigeration****Food Fair Packages Frozen Food Vertically To Gain Display Space**

PHILADELPHIA—Food Fair Stores, Inc. has revolted against the packaging concept of the frozen food industry.

Turning all other packers' rectangular packages on their sides to tie in with its own vertical display concepts, the nation's seventh biggest food chain introduced its own line of frozen vegetables in packages with identification running in a vertical rather than horizontal direction for display.

Vertical display enables the chain to show about 24 rows of packaging per 100 linear in. of display space, against 20 rows in the usual horizontal position, according to Carl Williams, frozen foods buyer for the chain.

The chain urged packers to adopt vertically-printed packages "for the most effective impact of labels since many retailers have been forced to display frozen foods this way because of the growing variety of frozen items."

In the 10-oz. package line are Fordhook limas, cut golden corn, and green peas, and 9-oz. French-style green beans.

Food Fair would like to see all packers adopt vertical packs particularly since the battle for additional cabinet space "appears to be getting worse, rather than better."

**Frigrite To Market Tyler Refrigeration Units In Australia**

NILES, Mich.—The signing of a partnership agreement by Tyler Refrigeration International, C.A. of Caracas, Venezuela and Niles, Mich., U.S.A. with Frigrite, Ltd., of Port Melbourne, Australia has been announced by Robert L. Tyler, president.

The agreement has been made retroactive to July 1, 1956, and calls for production of Tyler-designed supermarket equipment and its distribution to the Australian market by the Frigrite firm.

An additional tentative agreement was also made for the manufacture and distribution of Wilson bulk milk cooler systems, effective Nov. 1, 1956. Wilson Refrigeration, Inc., Smyrna, Del., is a subsidiary of Tyler Refrigeration Corp., Niles.

The partnership agreement with Frigrite, Robert Tyler said, is an important step in Tyler plans to further expand its international operations "to meet the rapidly increasing demand for Tyler commercial refrigerator products not only in Australia, but also in Europe and the Middle East, and in the fast-expanding Latin American and other export markets."

**Construct Supermarket**

CHARLESTON, W. Va.—Construction work is going forward on Charleston's newest and largest supermarket, Food Haven, at Bigley Ave. and Ash St., which will be provided with "all modern equipment, including more than 300 ft. of refrigerated cases."

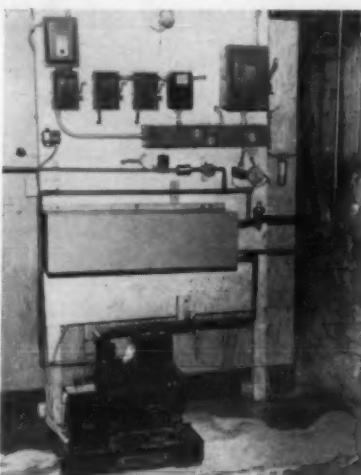
**Air-Cooled Condenser Solves Store's Water, Sewer Shortage**

READING, Pa.—A "unique" installation of a Kramer Trenton Co. "Unicon" air-cooled condenser has been put into operation at Ciotti's 18th Ward Supermarket here.

In addition to eliminating water from the installation, the Unicon, manufactured by Kramer Trenton Co., ventilates the machine room in summer and heats it during the winter.

The Unicon is designed for either indoor or outdoor mounting. In the Reading installation it is ceiling-mounted and connected to an outdoor duct.

The air duct has adjustable openings on the side so that the warm air from the Unicon can be recirculated through the building during the winter. During cold weather, this provides



CONTROLS and "L Thermobank" with Frigidaire compressor which automatically defrosts -10° F. box.

heat for the machinery room. In the summer, the hot air leaving the Unicon is ducted outdoors.

Endrico Ciotti, owner of the market, said that the supplementary heating system was not his principal reason for selecting the Unicon condenser. A troublesome shortage of water in the peak of the summer months, plus the lack of adequate sewer facilities, necessitated the choice of an air-cooled condenser for the market's frozen storage room.

Temperatures in the storage room, which measures 12 by 20 ft. and is 8 ft. high, are maintained at -10° F. The cooling and defrosting are done by the Kramer "L" Thermobank.

The Thermobank evaporator is a model TV280. The Unicon is a RC 200. A Frigidaire compressor completes the system.

The system was designed by Samuel B. Anewalt, owner of Reading Air Conditioning Co.

**Air Conditioned Food Center Has Big Frozen Food Section**

DALLAS—Featuring year-round air conditioning, the Tom Thumb Stores have opened a new 15,000-sq. ft. food center in the Phillips Shopping Center in Arlington.

R. B. Cullum, president of the Tom Thumb chain, said the new supermarket features one of Texas' largest frozen food departments. A completely self-service meat department has approximately 100 ft. of refrigerated meat cases.

**Supplies to Chain**

NEW YORK CITY—S.R. Soda Fountain Mfg. Co. recently announced that it now makes "most of the equipment" for the "Milk Maid" Ice Cream chain of stores.

S.R. supplies soda fountains, dipper bars, and stainless steel stands to the stores.



## You're better off with PENN cooling controls

FOR ALL COMMERCIAL AND RESIDENTIAL JOBS!

Just as important . . . Penn Controls "stay on the job" much longer with the kind of dependable performance that keeps and wins customers for you. Remember, in Penn's complete line, there is a type and model to fit your exact needs. A few models are illustrated above . . . there are many more. Learn more about them . . . ask your wholesaler or write for Penn's free condensed catalog and price list. Don't delay, do it now!

**PENN CONTROLS, INC.** Goshen, Indiana

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, GAS APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

## Replacement Sealed Unit Guide Issued

NEW YORK CITY—A new "Replacement Sealed Unit Compressor Guide" containing 50 photographs, which includes latest models of all "nationally advertised manufacturers," was recently issued here by Sealed Unit Parts Co. Inc., according to Henry Ehrens, president.

Being sent to refrigeration servicemen and jobbers, the guide uses line drawings to show pertinent details of each domestic sealed unit dome, Ehrens said. Free guides "are available to everyone," simply by writing the firm at 261 E. 161st St., New York City 51.

In addition to the catalog-sized guides for contractors, large 20 by 28-in. poster-sized guides are being sent to jobbers for showroom and shipping department display, it was explained. Ehrens claims this new picture method of identifying a replacement sealed unit "will enable the jobber to order an

advanced shipment by model number and receive it in about 48 hours depending on freight travel."

Besides the strainer, capillary, trouble shooting chart, instruction sheet, and wiring diagram which comes with all 1/2-hp. domes, the contractor will now also receive additional burnout protection, the company said. Each dome will now come equipped with a sealed circuit breaker made by "Klixon."

This new circuit breaker will work independently of any relay or overload and "offers additional winding protection against burnout and overload conditions," it was pointed out.

### American Brass Mills To Adopt Color Coding

WATERBURY, Conn.—The American Brass Co. announced that soon all of its tube mills will adopt the practice of color coding copper tubes furnished in straight lengths for water supply, heating, and sanitary drainage lines.

The color stripe on every tube will show the type and size as a means to easier and quicker identification by distributors, contractors, builders, and inspectors, according to the company.

The color code to be used was established by Copper & Brass Research Association and is as follows: Type K, green; Type L, blue; Type M, red; Type DWV, yellow; and Type TP, gray.

The markings run the length of the tube, with "Anaconda," type and size repeated.

For soft and semi-hard solders (50-50 and 95-5) it is not unusual to see gasoline, alcohol torches, and electric pliers used, although during the past few years I have noted that LPG-air and acetylene-air torches are most commonly used.

Not only are they used with soft and semi-hard solders on copper pipe and sweat type fittings up to 4 in., but also with silver solders up to 1 1/2-in. sizes where the silver alloy content is approximately 56% silver.

### Turner Answers 5 Questions

## Soldering, Brazing, Welding Equipment, Leak Detector Use Covered at ARW Region 6 Product Knowledge Clinic

CHICAGO—Answers to five 22% copper, 18% zinc, and 4% tin.

Most manufacturers of alcohol, LPG-air, and acetylene-air torches supply a wide variety of torch stem sizes to include dual arm or stag horn types. They permit the user to envelope the fitting for an even and better heat distribution.

Turner appeared as a panelist at the first "Product Knowledge Clinic" sponsored by Region Six of the Air Conditioning & Refrigeration Wholesalers. Due to time limitations he was only able to give the answers to the first two questions during the discussion. The remaining questions are given here for the information of readers.

**Question 1—What types of equipment are presently available for copper pipe and sweat type fitting soldering, brazing, and welding?**

There are six simple steps in making up a soldered joint:

1. Clean tube end and socket of fitting.
2. Apply flux to the cleaned areas.
3. Assemble.
4. Apply heat and solder.
5. Remove residual solder and flux.
6. Allow joint to cool.

Although these operations are basically simple, the difference between good and poor technique may be the difference between a good and a poor joint. These steps take longer to describe than do. For best results it is urged that none be omitted.

In applying heat and solder, the flame should be played on the fitting, pointing toward the tube. It should be kept in motion so as to heat as large an area as possible.

When the metal is hot enough, the flame should be moved away and the solder should melt on contact with the tube. If it does not, remove the solder and add more heat. Then try again.

Avoid overheating, which may burn the flux and destroy its effectiveness. If the flux has been burned, the solder will not enter the joint. Then the joint must be opened, recleaned, and refluxed. Overheating of cast fittings may also cause the fitting to crack.

When the joint is at correct temperature, the end of the wire of solder is touched to the joint. Never apply the flame directly on the solder. It should melt on contact. The solder is drawn into the joint by the natural force of capillary attraction, regardless of whether the solder is being fed in upward, downward, or sideways.

If the joint has been properly made, almost instantly a ring of solder will be observed all the way around the joint. Opinions differ as to whether or not a fillet is desirable.

When getting into the hard types of solders having silver

and copper contents, brazing alloys and phosphorus rods, it is generally accepted practice to use the oxygen-acetylene flame. This is particularly true when working with sizes of 2 in. and up, for greatest efficiency.

Quite recently a revolutionary type of blowpipe was placed on the market that can be used for welding and cutting by merely changing the tips. We understand that this blowpipe will weld up to 3/8-in. metals, silver solder, braze, or weld the presently available commercial sizes of copper pipe and sweat type fittings as well as cut up to 2 in.

**Question 2—What about leak detectors for halogen vapors or gases?**

There are different types of leak detectors. Torch types use different fuels such as alcohol, LPG-air, acetylene-air, and electric with visual or audio detection. A wax candle type has a very fine copper wire running through the middle of it.

From current observations the alcohol, LPG-air, and acetylene-air torch types are the ones most commonly used in the service and contracting trades.

The basic construction principles of the torch types are about the same, consisting of an air mixer with exploratory suction hose inlet tube, and a

(Concluded on next page)

**We're SPECIALISTS in**

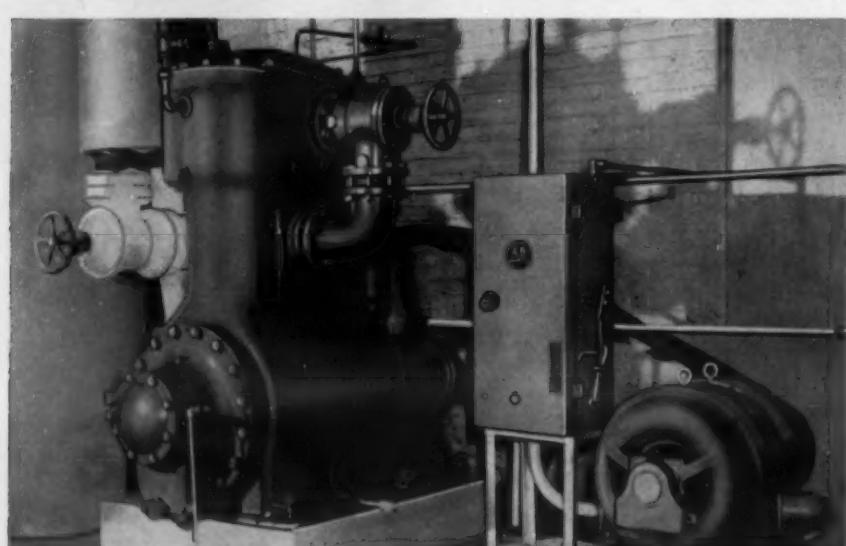
**REFRIGERATION**  
**AIR CONDITIONING**  
**ELECTRIC MOTORS**

**PARTS and Supplies**

**WE SAVE YOU MONEY** because we're specialists, with the largest selection in the world—over 10,000 items—at lowest prices. They're all illustrated, priced and described in our newest **HARRY ALTER DEPENDABOOK**—"the standard of the trade."

Write on your letterhead for the DEPENDABOOK

**WHOLESALE ONLY** The HARRY ALTER CO., Inc., 1717 S. Wabash Ave., Dept. A, Chicago 16, Ill.

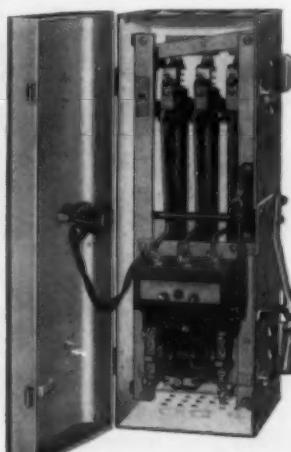


### VELVET SMOOTH ACCELERATION for COMPRESSOR MOTORS

The stepless acceleration of Allen-Bradley Bulletin 640 manual resistance starters brings motors up to full speed with velvet smoothness . . . no jolts or jerks on gears, belts, or connected machinery . . . no heavy current inrush to cause flickering lights. Operation is simple. Lift operating lever slowly and motor gradually comes up to speed. Automatic switch-over to line voltage occurs at full speed without opening the circuit between motor and line.

Allen-Bradley Co.

1313 S. First St., Milwaukee 4, Wis.  
In Canada—Allen-Bradley Canada Ltd., Galt, Ont.



Bulletin 640 manual resistance type starters are rated up to 200 hp, 220-440-550 volts. Dependable overload relays protect motor during running.

**ALLEN-BRADLEY**  
SOLENOID MOTOR CONTROL  
QUALITY



The Sign of  
**QUALITY**  
MOTOR CONTROL

**FOR DEHYDRATING AND TESTING . . . BEACH-RUSS Portable VACUUM PUMPS**

**COMPACT**      **RUGGED**  
**LIGHTWEIGHT**

**Model O Single-Stage Pump—1 mm. vacuum, blank flange, 1 CFM, 1/2 HP, weight 48 lbs.**

**Model A Two-Stage Pump—1/10 mm. vacuum, blank flange, 2.5 CFM, 1/2 HP, weight 80 lbs.**

Write for prices and data.

**BEACH-RUSS COMPANY**  
52 CHURCH ST. • NEW YORK 7, N.Y.

**Redmond MICROMOTORS**  
One of largest stocks  
in the world!  
FACTORY DISTRIBUTORS  
MARVIN L. "FERGIE" FERGESTAD  
**CYCLO-FREEZE CORP.**  
6318 Cambridge, Minneapolis 16, Minn.  
West 9-6794

**"A CASE OF COOL JUDGMENT"**

**FLO-COLD DRINKMASTER**  
STAINLESS STEEL CUBER—COOLER.  
SOLD THRU DEALERS ONLY  
WRITE

**United Frigulator Engrs.**  
MENOMINEE, MICH.  
AVAILABLE IN SIZES 4 to 10 FT.

**Answers on Equipment, Use--**

(Concluded from preceding page) lene-air neutral flame color is flame shield equipped with a copper or alloy reaction plate.

The methods of detection with torch type detectors are also quite similar. You check around all joints with the exploratory suction hose. Any escaping halogen vapor or gas (as little as 100 p.p.m.) is drawn through the hose into the flame.

Using a copper reaction plate, a green tint in the flame from its normal pale blue shows the presence of gas. As the hose gets closer to the leak, the flame color changes to a blue green or violet. The flame color clears immediately when the leak is passed. A few sweeps with the suction hose exactly locates the source of the leak.

The color change will differ when using an alloy reaction plate, which is super-sensitive, although the detection methods are identical. Small concentrations, as little as 20 p.p.m. change the flame color from pale blue to orange-yellow, and heavier concentrations change the color to a vivid purplish-blue.

The exact source of a leak can be located quickly, by watching both the changes in the flame color and color intensity.

Torch type detectors are not to be used to search for leaks of ethyl or methyl chloride, or any other combustionable gas.

**Question 3—**What sizes of cylinders and/or tanks are available for the soldering, brazing, welding, and leak detection applications?

Liquified petroleum gas is available in an approximate 1-lb., throw-away, non-refillable cylinder, and with these units the torch stems or leak detector connect direct to the cylinder.

There are also available 5, 10, 20, 35, 40, 60, and 100-lb. cylinders. In most cases these sizes require a regulator and hoses to connect from the cylinder to a soldering, heating, or leak detection torch.

Acetylene cylinders are usually of 10, 40, 60, 100, 150, and 300-cu. ft. capacities, with those most commonly used in the service trades being of 10, 40, and 60 cu. ft. due to their greater portability. The exceptions to this would be shop use, where 100, 150, and even 300-cu. ft. cylinders would be used.

The 10-cu. ft. size will accommodate direct connection to soldering or leak detection torches, although greater flexibility is obtained using a regulator and hose to connect the type of torch being used.

Oxygen cylinders are of 60, 80, 122, 244, and 300-cu. ft. capacities, with the 60 and 80-cu. ft. sizes being quite portable.

There will soon appear on the market 3,000-cu. ft. liquid oxygen cylinders, which are not too hard to use with a cylinder cart.

**Question 4—**What are the comparisons of fuel-gas flame characteristics, neutral flame color, and flame temperatures?

When used with a blowpipe, each gas produces a flame with specific characteristics, different temperature, and different heat of combustion, etc.

The neutral flame color of LPG-air is greenish-blue, with the outer cone blue. The acety-

lene-air neutral flame color is pronounced greenish-blue and the outer cone reddish-violet-orange feather. The acetylene-oxygen neutral flame is a greenish-blue and the outer cone blue-red specks.

The acetylene-air flame temperature is approximately 4,000° F., liquified petroleum gas-air 3,100° F., and the acetylene-oxygen approximately 5,500° F.

**Question 5—**Would you suggest any specific safety precautions?

There is one in particular that I might emphasize. Never use any acetylene-air devices, with a shut-off valve connecting the hose direct to the cylinder. Always use a regulator.

This is not only good safety practice, but good gas economy. The cost of the regulator will be saved by the gas economies.

**Sporlan Valve Field Sales Organization Meets**

ST. LOUIS—Sporlan Valve Co.'s national field sales organization met here for a series of conferences and a general sales meeting.

Following a tour of the company's manufacturing facilities and individual conferences with company department heads, the group moved to Pere Marquette Lodge near Grafton, Ill.

This phase of the five-day meeting was diversified and covered technical subjects as well as improved sales methods.

One of the highlights was a preview of new illustrated talks; one on installation and service, the other on refrigerant distributors, plus a streamlined version of the thermostatic expansion valve presentation. These talks will be available to the industry in the near future.

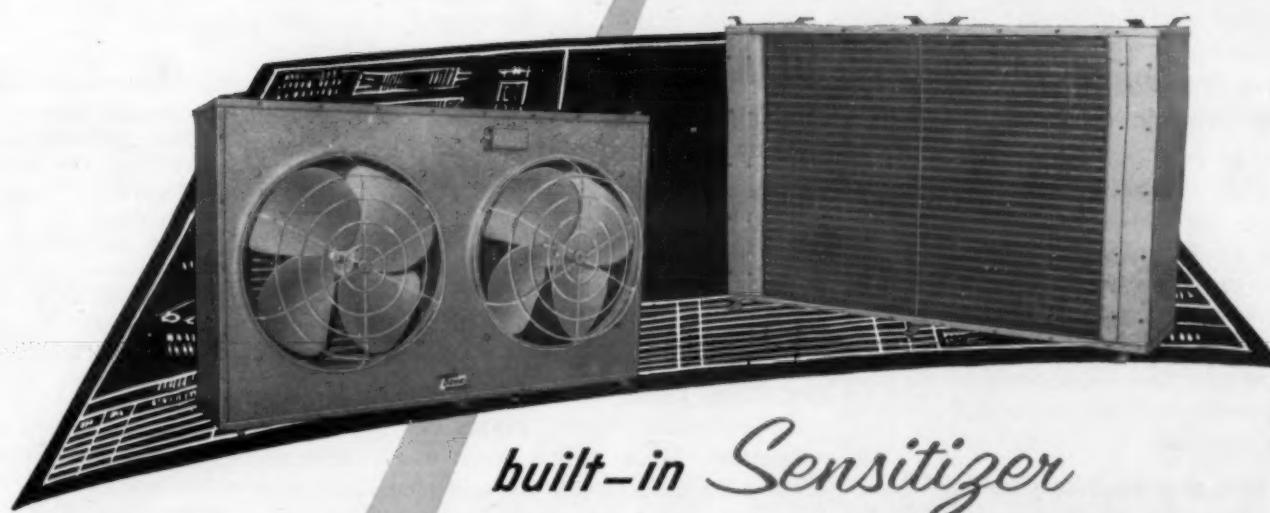
"All of the subjects covered



SPORLAN VALVE field sales personnel who attended the national meeting included: Front Row (l. to r.) M. D. McAnany, W. H. Krack, W. P. Schober, J. T. Barry, W. L. Canfield, C. C. Grote, H. F. Spehrer, H. T. Lange, W. T. Carmody, H. F. Shield, W. F. Wischmeyer, D. B. Rentschler. Second Row (l. to r.) D. M. Lawson, F. C. Hawco, T. H. Silary, J. A. Hogan, P. J. McCarty, A. L. Javes, A. Owens, E. P. Sullivan, F. B. Watts, F. G. Jaeger, J. E. Daniels, F. A. M. Dawson, M. L. Moore. Third Row (l. to r.) H. D. Clyde, G. B. McMenamy, E. C. Fockler, R. E. Niedermeier, R. L. Vandiver, T. Gislason, W. A. Reichenbach, R. H. Parlin, R. S. Dell, F. L. Vaughn, J. J. Mays.

during the conference and the engineers better tools with sales sessions were carefully chosen which to serve the industry," it was pointed out.

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*built-in Sensitizer  
maintains proper head pressures*

BOHN engineers have developed a winter controlled air-cooled condenser equipped with built-in sensitizer to maintain head pressures when outside air temperature drops . . . eliminate hand valves in the control system . . . simplify piping.

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Of finest quality, new BOHN air-cooled condensers are economically priced. They offer sturdy, rust-resistant construction in grained aluminum cabinet housing . . . trustworthy capacity ratings . . . famous Betz coils . . . fans which operate quietly . . . life lubricated ball bearing motors with thermal overload protection.

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Do It  
Every  
Time  
by  
Jimmy  
Hatlo



## Doing Business Like You're Going Out of Business

Sometimes we wonder if the home appliance business has gone nuts. Obviously it has been going haywire for the last couple of years.

**Ruthless fighting for volume** has got to the point where practically nobody—manufacturer, distributor, or dealer—is making enough money to stay alive for long, or to make needed provision for future growth.

Furthermore, the profit picture looks so grim that many of the best dealers and distributors either are getting out of the business, or thinking bleakly about abandoning it soon unless its tenor changes tune.

What price volume at any price?

Business growth is worthwhile only if it provides opportunities for people to grow, and to hope for better times in years to come. With continually shrinking margins, dependence on "the deal" and wheel-and-dealing, what's the future for dealers? What opportunities can they foresee for themselves? How can the appliance industry attract the young men and women it needs to perpetuate itself?

**Glibly the argument** has been proposed that "we have to broaden the base of the market" by pushing prices downward. Assumption is that lower prices will bring more buyers into dealer stores automatically.

Now we ask anyone: How has this broaden-the-base theory worked out for refrigerators, freezers, ranges, room air conditioners in the last couple of years? Their over-all sales by appliance dealers actually have dropped during this turbulent era of chaotic price cutting. Will someone please tell us: How has the base of the market been broadened, and by whom? When and where?

**Actually it would seem** that some of the "masterminds" in the appliance business are out of touch with *the people*—their customers. Apparently they don't realize that price has been supplanted by pride of possession. **THE PEOPLE** are evidencing overwhelming desires for "buying up," for personal betterment. They're spending more money, not less. Yet:

*The appliance business is being conducted as if it were going out of business.*

Most of the local advertising you see is of the "Fire Sale," "Going Out of Business Sale," "Lost Our Lease Sale," type—in effect. All appliance merchandising pressure

is downward on low price, discounts and deals—rather than upward toward customer satisfaction and pride of possession.

That attitude runs contrary to everything which astute marketers, economists, and just plain reporters are observing about modern consumer attitudes nowadays.

*The depression is over. People are in an upgrading mood. They are bolstering their egos by purchasing higher-cost products.*

**Automobile people know** that, and act accordingly. They're loading their products UP with extras, not stripping them down to a cut price. In announcing its forthcoming "Edsel" line of cars the Ford Motor Co. explained that "people want to trade up into higher classes; and we've been losing sales because we haven't offered them enough higher-priced cars they now can afford."

Bigger homes are easier to sell today.

The Labor Department estimates that the average size of new homes in 1956 rose to 1,230 sq. ft., an increase of 6% over 1955.

**"For years builders** have been building the minimum home," states the *Wall Street Journal*. "Now people want more room and more freedom. They are willing to pay more if they can get something they want."

Marketers of clothing, vacations, hobby stuff, jewelry, recreational devices, fancy foods, knickknacks and gadgets sense the Temper of the Times, too. They realize that the Depression is long gone. They're selling trips to the Caribbean, mink jackets for pet dogs, Bermuda shorts, hi-fi sound equipment and records, outdoor swimming pools—anything and everything to help a purse-happy, spending-minded Public indulge its desire for "setting a better dining table." People feel better when they buy better.

**Appliance pooh-bahs** apparently have missed this point entirely. They're still advertising low price, cheaper products, discounts, deals... instead of advantaging the public mood for luxury and pride of possession. We repeat:

*The depression is over. Yet appliance people are running their business as if they're going out of business.*

As a matter of fact, quite a few appliance manufacturers, distributors, and dealers ARE going out of business because of this wrong-way-Corrigan situation.

In the name of the Three Little Pigs, the Five Foolish Virgins, and the Seven Silly Screwballs, who's crazy now?

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Published Every Monday by BUSINESS NEWS PUBLISHING CO., 450 W. Fort St., Detroit 26, Mich. Telephone Woodward 2-0924. Subscription Rates: U. S. and Possessions and Canada: \$6.00 per year; 2 years, \$9.00; 3 years, \$12.00. All other countries: \$10 per year. Single copy price, 40 cents. Ten or more copies, 30 cents; 50 or more copies, 20 cents each. Send remittance with order.

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VOLUME 80, NO. 4, SERIAL NO. 1,453, JANUARY 28, 1957



### OFF THE CHEST

#### SCHOOL TO WORK ON PERSONNEL PROBLEM

Industrial Technical Schools  
Boston 14, Mass.

Editor:

I read with great interest your "Inside Dope" article in the Dec. 10 issue of AIR CONDITIONING & REFRIGERATION NEWS, concerning the need for both Engineering and Technical trainees for the future expansion of the Air Conditioning & Refrigeration industries.

We do believe that the fields of Air Conditioning & Refrigeration are being undersold and many of the young men who would be interested in the potential future of these fields are being lost to other industries that are conducting a high-powered sales campaign to attract them. Everything you have said in your article aims directly at this particular problem. However, it does require a great deal of coordinated effort.

We have decided to carry the ball for our area to see exactly what can be done and if successful, the same program can be used in other sections of the

country where shortages are bound to exist. As soon as I have received the results of the questionnaire submitted to all the companies who are interested in this particular effort, I shall send you a complete report.

I believe that you are in a position to help us a great deal in our efforts.

G. M. GALVIN,  
Director

#### SERVICEMAN WHO SPOKE GETS SOME SUGGESTIONS

Editor:

To the serviceman who speaks up in the Dec. 17 issue of AIR CONDITIONING & REFRIGERATION NEWS. Your point is well taken that the good servicemen are human and are doing a good job. The Service Companies will indeed verify this. However, may we suggest that you continue to read the weekly issues of AIR CONDITIONING & REFRIGERATION NEWS and consider joining the New York Metropolitan chapter of the Refrigeration Engineers Society.

R. C. Serviceman

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## Reach-In Offers Adjustable, Removable, Interchangeable Interior, Mobile File

KANSAS CITY, Kan.—Completely adjustable, removable, and interchangeable interiors and a mobile food file are the chief highlights of the 1957 reach-in refrigerator line announced by Koch Refrigerators, Inc.

### FOOD HANDLING SYSTEM

An entirely new line in what is termed "a new concept of reach-ins," Koch series "M" is claimed to be the result of much research to devise a cabinet that "would not be just a refrigerator, but a food handling system."

Koch further claims there is "no conceivable application" for a commercial reach-in refrigerator in the heavy duty, fast operation field that cannot be filled from series M.

Available in 1, 2, 3, or 4 section widths, front opening, or pass-through, with solid or glass doors, self-contained or remote, porcelain or stainless steel, for medium or frozen storage, in 26 and 34-in. depths, this series offers the full range of "any of thousands of combinations" of facility features, the company said.

Cabinets are of all-steel, all-welded construction with heavy stainless steel front frames for strength. Bases are welded, channel type, cross-braced steel sections with heavy stainless steel fronts and ends, it was pointed out. All hardware is flush with door surfaces for safety and durability.

**SERIES M** is the new Koch reach-in refrigerator with cabinet which the firm says "is not just a refrigerator, but a food handling system."

one piece and seamless, flashed standard size pans is included up on all sides including the door openings and are equipped with water sealed brass traps to carry off waste fluids.

Complete adjustability of the wire shelves and "bonus shelf" arrangement provides utilization of all shelves with adequate allowance for top-to-bottom refrigerated air circulated, it was explained.

### MOBILE FOOD FILE HAS OWN CART

The mobile food file is completely self-contained in a frame and equipped to slide in and out of lower doors to or from a special cart. Completely open at both ends, so it can be used as a front opening or pass-through cabinet, the mobile food file can be loaded with 18 by 26-in. or 14 by 18-in. trays allowing bulk or one-at-a-time handling, it was added.

A pan file "which makes corner cleaning. Bottoms are possible economical storage" of

**Just Home from Convention, Creamery Package Executive, Oscar F. Stauder, Dies at 57**

CHICAGO—Oscar F. Stauder, head of refrigeration division sales for Creamery Package Mfg. Co. here, died here Jan. 19 following a heart attack. He had just returned to Chicago from the Frozen Food Convention and Exposition which was held in Miami, Fla.

Stauder, who was 57, joined Creamery Package in 1952, and was made head of refrigeration sales in 1956. In his previous industry experience, he had for many years headed up the Detroit office of Westerlin & Campbell, refrigeration air conditioning and contracting firm. Stauder had pioneered some of the first work on low temperature test rooms for testing motor engines and vehicles, it was added.

### St. Louis Market To Add Refrigeration, Walk-Ins

ST. LOUIS—The city will install a new refrigeration system and walk-in coolers at the Union Market, 700 N. Sixth St., according to Frank J. McDevitt, president of the board. Estimated cost is \$95,000.

## If you buy TUBULAR PARTS

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Choice territories now available for sales representation. Inquiries invited.

For more information about products advertised on this page use Information Center, page 20.

## Planning for Irradiated Foods

### 'Atoms for Living' Kitchen Includes Ceiling-Hung 50-55° Refrigerated Compartment, Normal Refrigerator, Freezer

CHICAGO — A Kelvinator company's space in The Merchandise Mart designed "Atoms for Living" kitchen that includes a refrigerated compartment for irradiated foods was displayed at the furniture market here in the com-

The kitchen was designed by Kelvinator at the request of Monsanto Chemical Co. "to meet the needs of the house of the



"ATOMS FOR LIVING" kitchen by Kelvinator introduces constant-temperature storage for foods preserved by rays produced by atomic energy.

future," perhaps five to 15 years in the future." It is to be installed in Monsanto's "House of the Future" at Disneyland Park, Calif. by June.

In describing the kitchen, Kelvinator said that for a number of years it has been supporting research by the University of Michigan and working with university researchers in the area of food preservation by gamma irradiation.

"Progress in this area to date indicated that any thoughts about future kitchens or food-keeping centers should include planning for irradiated foods," the company stated.

"The 'Atoms for Living' kitchen is the first designed to incorporate the results of testing in this area of atomic energy research. The key lesson for Kelvinator was this: a light dose of irradiation, combined with moderate refrigeration, increases the life of many food products by weeks, months, and years, depending on the specific food, without detriment to food wholesomeness."

#### Third Cold Zone

"It is possible to design a refrigerated chamber to operate at a moderate 50 to 55° of cold especially for irradiated foods. This introduces a third zone of cold, contrasting with the 40° normal to a contemporary fresh-food refrigeration compartment, and approximately 0° for frozen food chests."

The kitchen specifically includes a freezer compartment, a "normal" refrigerator compartment, and a third refrigerated compartment for irradiated foods, all of about 7 cu. ft. capacity.

All three are ceiling-hung in a "bank" masked by an attractive molded plastic exterior. They drop down to convenient eye-level for use at the touch of a button, and disappear behind the plastic paneling when not in use.

#### Can Add More Refrigeration

The entire "bank" area has enough room for an additional three or four refrigerated compartments in package units similar to those already included, depending on family needs and developments in food packaging and preservation.

"The freezer and refrigerator have an added convenience feature," it was noted. "Both are divided into front and rear sec-



SHELF STRUCTURE distinguishes refrigerated compartment for irradiated foods, in "Atoms for Living" kitchen.

tions which may be lowered independently, so that you never have a deep reach into any shelf to get at the stored foods."

The back wall below the refrigerated cabinets has a venting and air conditioning strip the full width of the wall, and a "work-wall" series of shallow-shelf storage compartments for small appliances and other kitchen utensils. Door-panels of the work-wall swing upward. Below the storage-wall area is a series of dispenser-compartments for measuring out and dispensing desired amounts of condiments, flour, sugar, coffee, etc.

Base cabinet area has a one-piece molded plastic top, with a shallow food-preparation sink as an integral part of the top.

Main counter area includes an electronic range concealed beneath the top, that rises to the top of the counter by push-button signal. The range permits microwave cooking of various foods at the same time, and has a mirror-like door-panel of glass coated with metal to keep the microwaves inside. When the oven-light is turned on, the mirror-effect disappears and you can watch the food being cooked inside.

"Since there are some frying and other operations that cannot be handled electronically, the kitchen includes a surface-cooking panel in one of the counter tops," the company said. "Storage drawers beneath the counters have no sides, so that you can remove items easily through the top or out through the sides. There is a single support wall down the center."

An "island" in the center of the kitchen houses desk, communications center, work-sur-

face, and ultra-sonic dishwasher. The ultra-sonic principle employs high-frequency sound waves, which set up vibrations in the wash-water "powerful enough to remove all the sticky food particles." A garbage disposal device takes care of waste, and the dishes are warm-air dried and may be left in the dishwasher rack for storage. Plumbing and electrical connections are through the legs.

"The area has been styled deliberately not to look like a kitchen when not in use, to fit the open house plan of tomorrow, where people in dining or family living areas will be able to view the kitchen from where they sit," Kelvinator explained. "It is possible that the word 'kitchen' itself could disappear from our vocabulary in favor of some new term that could describe this family food center."

#### Plastic Material Used

"Materials used in the Atoms for Living kitchen (or family food center) are the plastics of today in entirely new applications, demonstrating the likelihood of increased use of new materials in these applications as research improves on today's knowledge. An advantage immediately apparent to the designer has been the ability to mold the plastic materials in subtle curving lines that make for pleasing over-all effect."

"Even in the choice of materials, atomic research has implications, since experiments in the exposure of plastics to irradiation, much in the same manner foods are irradiated, already are producing new strength and heat-resistance characteristics in the plastic materials of today."

## Lincoln BBB To Fight Pre-Ticketing, False Comparative Price Claims In Ads

LINCOLN, Neb.—The Lincoln Better Business Bureau has announced a campaign to combat the use of pre-ticketing and fictitious comparative price claims in advertising home appliances.

James Sandin, manager, said the bureau has no quarrel with comparative prices that are legitimate, but has learned that use of fictitious claims is starting to get out-of-hand.

He noted that while unsubstantiated comparative prices may originate at the local retail level, the situation is complicated by fake pre-ticketing and inflated list price practices carried on by some national and regional manufacturers of appliances.

"The use of false or unverified claims regarding the value, former price, original, regular or usual prices, threatens public confidence," Sandin declared.

"Although most prices at

which appliances actually are sold are probably the true value of the merchandise offered for sale, it is false and misleading for advertisers to create an illusion of a savings which, in fact, do not exist."

The bureau's campaign calls for intensive "shoppings" of comparative price advertising. Where advertisers are unwilling or unable to substantiate their claims they will be warned to desist. A state law banning untruthful advertising can be utilized as a last resort. Publications also will be informed when investigation indicates false price claims of appliance dealers.

#### Aircraft Cooling

NEW YORK CITY—Recony Corp., manufacturer of ground support equipment for aircraft and electronic air conditioning, is now making over 1,500 air conditioning systems a year used in pre-flight cooling.



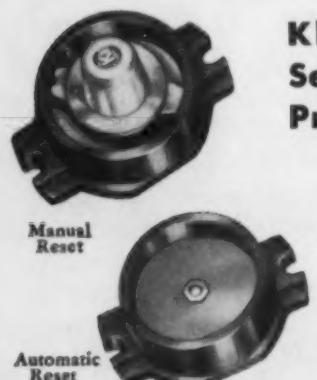
## Motor Repairman Recommends KLIXON Protectors For Burnout Protection

STEELTON, PA.: Wayne L. Beane, Secretary of the Electric Service & Machine Company, has worked on hundreds of motors through the years. He knows from experience how KLIXON Inherent Overheat Protectors prevent motor burnouts.

"We've found that those motors equipped with Spencer Klixon Overload Protectors come in for repairs less frequently, and with less repairs required. We recommend their use."

### Klixon Protectors Reduce Service Calls and Repairs by Preventing Motor Burnouts

The KLIXON Protector, illustrated, is built into the motor by the motor manufacturer. In such equipment as refrigerators, oil burners, washing machines, etc., they keep motors working by preventing burnouts. If you would like increased customer-preference, reduced service calls and minimized repairs and replacements, it will pay you well to ask for equipment with KLIXON Protectors.



**KLIXON**  
MADE IN U.S.A.  
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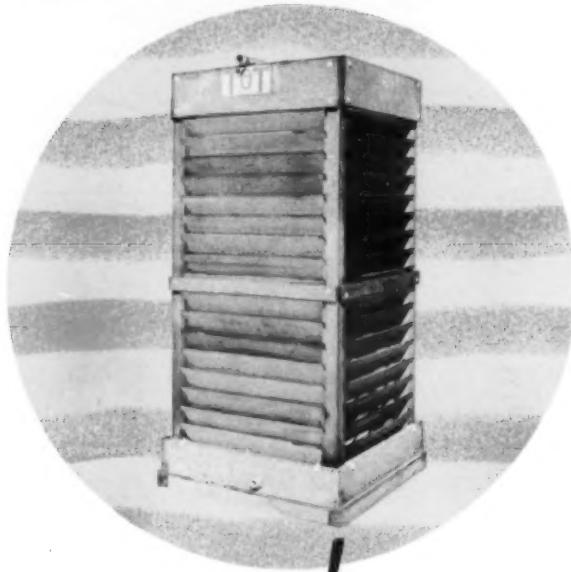
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**PLYWOOD BOTTOMS ARE GUARANTEED FOR FIVE YEARS**

Ruggedly constructed from all heart redwood, basin bottoms are of redwood and exterior plywood construction. These towers are designed to withstand up to 30 psf windloads... have exclusive TOT non-clogging bronze nozzles and galvanized pipe spray head assemblies.



### **SERIES "K"**

Select heart or better redwood with marine bond exterior plywood basin bottoms as standard... 1½" x 6" (nominal) rough redwood louvers... basins completely assembled. Available 2 to 27 tons.

### **SERIES "C"**

Construction heart or better all heart redwood... 1" x 8" (nominal) louvers... moderately priced but designed for long service... basins completely assembled with plywood bottoms as standard. 2 to 27 tons.

### **SERIES "D"**

Same specifications as "K" series except, louvers are 1" x 8" (nominal).

### **SERIES "A"**

Select heart or better redwood... standard 12-foot high posts... redwood tongue-and-groove basin bottoms... 1" x 8" louvers... shipped completely disassembled. Available 4 tons to any desired tonnage.

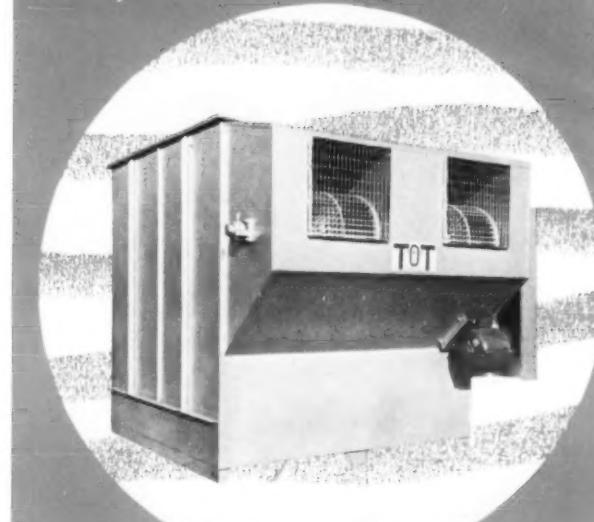
## **Only TOT Atmospheric Towers Offer All These Features**

- All jig cut and pre-drilled for quick and easy final assembly—no sawing or cutting necessary.
- Bronze valves with machined heavy duty valve seats, brass rods, copper balls.
- Finest grade plated hardware.
- Extra wide top trim boards to retard drift and to prevent tower racking.
- Center bands on towers larger than five tons to prevent louver post warpage.
- Exclusive TOT galvanized corner brackets... eliminates need for bolts... reduces erection time... adds strength.



## **TOT INDUCED-DRAFT TOWERS CENTRIFUGAL BLOWER TYPE**

**CENTRIFUGAL BLOWER TYPE**



### **CO-COI SERIES**

**Galvanized Steel**  
Sturdy construction of mill galvanized sheets joined by Carbon Arc-Everdure (bronze) method to form corrosion-resistant bond. All inside surfaces (including distribution basin cover and fan box) undercoated after assembly to prolong life of coating and deaden sound. (COI-towers furnished with 12 gauge basins and 14 gauge walls for heavy duty specifications).

### **COW-COWA SERIES**

**Wood or Cement Asbestos**  
The quietest, most economical, most durable tower of its type on the market today—will outlast by many years any steel tower. Walls and basin bottoms constructed of all heart redwood and marine bond exterior plywood as standard. (COWA-towers furnished with cement asbestos outer walls)... assembled with plated hardware... centrifugal blower and housing especially plated for cooling tower application, low pump head, redwood nailless fill.

## **Outstanding Features**

- All bearings, belts and pulleys located out of all air streams to provide longest possible life.
- Blower and housing plated especially for cooling tower application.
- Adjustable motor pulley—to obtain higher static pressure on ductwork.
- Bearings are standard commercial units for easy replacement from local suppliers.
- Towers under 80 tons shipped with distribution basin covers as standard equipment.
- Belts and blower guards furnished as standard equipment on all sizes.

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PROPELLER — ATMOSPHERIC — CENTRIFUGAL BLOWER

## TOT INDUCED-DRAFT TOWERS PROPELLER TYPE



### PF-PFI SERIES

#### Galvanized Steel

Sturdy construction of mill galvanized sheets joined by Carbon Arc-Everdure (bronze) method to form corrosion-resistant bond. All inside surfaces (including distribution basin cover and fan box) undercoated after assembly to prolong life of casing and deaden sound. (PFI-towers furnished with 12 gauge basins and 14 gauge walls for heavy duty specifications).

### PFW-PFWA SERIES

Wood or Cement Asbestos  
The quietest, most economical, most durable tower of its type on the market today . . . will outlast by many years any steel tower. Walls and basin bottoms constructed of all heart redwood and marine bond exterior plywood as standard. (PFWA-towers furnished with cement asbestos outer walls) . . . assembled with plated hardware, low pump head and redwood nailless fill.

## Outstanding Features

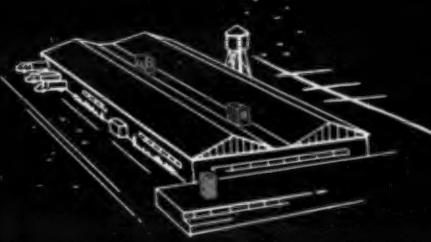
- Low sound level type fan.
- Rigidly mounted drive.
- Weather-protected, easily accessible motors.
- Has sump screen, overflow, drain float valve and anti-cavitation plate as standard equipment.
- Has stainless steel propeller (heavy plated and painted steel above 30 tons).
- Towers under 80 tons shipped with distribution basin covers as standard equipment.
- Belts and fan guards furnished as standard equipment on all sizes.

T DISTRIBUTOR

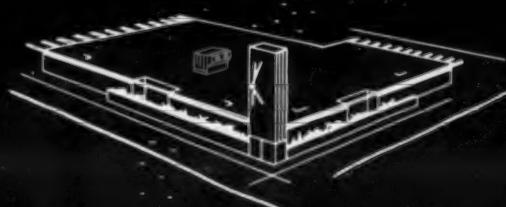
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For Every Climate  
There's a **TOT** Tower  
Carried In Stock



HOME



INDUSTRIAL



COMMERCIAL

Save time . . . save trouble . . . save money — insist on TOT towers. No makeshift arrangements to adapt improper towers to your needs, no call-backs to repair units unsuited for weather conditions in your area. There's a TOT tower for every purpose, every climate, in stock for immediate shipment. Atmospheric units are shipped knocked-down for quick, easy assembly (basins assembled as standard with plywood bottoms on all models except Series "A") — all mechanical towers are shipped as complete packages to eliminate final assembly labor costs.

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 Montgomery:  
 R & H Supply Co.  
 662 South McDonough Street  
**ARKANSAS**  
 Fort Smith:  
 Central Supply Co.  
 109 North 10th Street  
 Little Rock:  
 \*Refrigeration & Electric Supply Co.  
 1224 Spring Street  
 Texarkana:  
 \*Interstate Electric Co.  
 307 Best Front Street  
**CONNECTICUT**  
 Hartford:  
 Standard Sheet Metal Works, Inc.  
 837 Windsor  
**DELAWARE**  
 Wilmington:  
 Wilmington Plumbing Supply  
 2000 Maryland Avenue  
**FLORIDA**  
 Miami:  
 \*Ace Refrigeration Supplies, Inc.  
 46 N. W. 36th Street  
 FR 1-1852

\*Towers Available From Local Warehouse Stocks

<b>Palm Beach:</b> *Ace Refrigeration Supplies, Inc.	<b>NORTH CAROLINA</b>
Orlando: *Orlando Refrigeration Supplies Inc. 701 West Robinson	Greensboro: *Hasco, Inc. 518 N. Spring Street
	Winston-Salem: *Hasco, Inc. 321 S. Liberty Street
<b>Atlanta:</b> *Carrier-Atlanta Corp. 419 Peachtree St. N. E.	4-9131
<b>Savannah:</b> Savannah Refrigeration Supply, Inc. 130 West Bay Street	9977
	Jackson 5-3541
<b>ILLINOIS</b>	<b>Oklahoma City:</b>
Chicago: *Mid States Air Cond. Equipment, Inc. 4640 W. Washington Blvd. Columbus 1-7075	*Jones-Newby Supply Co. 129-133 N. W. 23rd St.
Pearie: *Comfort Control 100 Walnut Street	304-310 East Second St.
Springfield: *R. N. Spangler & Co., Inc. 18th & Capitol	Luther 4-6606
	<b>PENNSYLVANIA</b>
<b>INDIANA</b>	Philadelphia: *Allied Electric Appliance Parts, Inc. 1320 W. Erie Avenue
Mishawaka: *Valley Equipment Co. 220 N. Ironwood Drive	Baldwin 9-8800
	<b>RHODE ISLAND</b>
<b>IOWA</b>	Providence: *Empire State Equipment Co. 36-38 Randall Street
Des Moines: Dennis Supply Company 1912 Sixth Avenue	Gaspee 1-2320
SIOUX CITY: Dennis Supply Company 609 Perry Street	<b>TENNESSEE</b>
	Memphis: *R. H. Spangler & Co., Inc. 676 Marshall
<b>Kansas City:</b>	5-0246
Wichita: *Superior Supply Co. 335 South Washington	<b>TEXAS</b>
	Abilene: *Refrigeration Supply & Electric Co. 1065 South Second
<b>LOUISIANA</b>	2-3001
Baton Rouge: *Atlas Refrigeration Supplies, Inc. 2443 North Street	Austin: *K & M Supply Co. 208 Brazos St.
New Orleans: *Acme Refrigeration Supplies, Inc. 745 South Galvez St.	GR 2-3153
	Corpus Christi: *South Texas Refrigeration Supply Co. 1315 Agnes Street
<b>LOUISIANA</b>	3-4127
Shreveport: *Interstate Electric Co. 1419 Culpepper Street	Dallas: *Climate Supply Company, Inc. 3912 Main Street
	TA 4-6307
<b>MARYLAND</b>	El Paso: *M & M Refrigeration & Supply Co. 2505 Texas Street
Baltimore: Kleinman Brothers, Inc. 615 West North Avenue	3-2459
	Fort Worth: *Koldaire Supply Co. 1404 Calhoun Street
<b>MASSACHUSETTS</b>	Edison 2-2368
Boston: *The Alradyne Co. 1826 Centre St.	Houston: *Golden Crescent Sales F. O. Box 14384
	Mission 5-5630
<b>MISSISSIPPI</b>	Lubbock: *Nunn Electric Co. 1801 Fourth St.
Jackson: *Paine Refrigeration Supply Co. 934 South Gallatin St.	PO 3-2603
	San Angelo: *Central Electric Co. 218-20 N. Chadbourne
<b>MISSOURI</b>	6525
Kansas City: *Superior Supply Co. 1816 Walnut St.	Tyler: *Climate Supply Co., Inc. 1312 W. Erwin Street
	3-1651
St. Louis: *R. H. Spangler & Co., Inc. 3321-33 Market Street	<b>VIRGINIA</b>
	Norfolk: *Noland Company, Inc. 24th & Church Sts.
<b>NEBRASKA</b>	Madison 2-6541
Omaha: Dennis Supply Company 2917 Douglas Street	Richmond: *Air Conditioning Suppliers, Inc. 3100 W. Clay Street
	84-2468
<b>NEW YORK</b>	<b>WISCONSIN</b>
Manhattan: *Aerco Supply Co. 310 East 138th Street	Milwaukee: *Layton Supply Corporation 4028 S. Howell Avenue
	Sheridan 4-9750
<b>NEW YORK</b>	R. L. Craig & Associates Box 64, Louisville, Kentucky
Manhattan: *Aerco Supply Co. 310 East 138th Street	Glendale 8-2709
	William S. Farnum Co. 720 Fox Bldg., Detroit, Mich.
<b>NEW YORK</b>	Woodward 3-2809
Manhattan: *Aerco Supply Co. 310 East 138th Street	Vernon Tupper Co. Box 1103, Nashville, Tenn.
	4-6559
<b>NEW YORK</b>	Mechanical Equipment & Supply 609 Augusta St., San Antonio, Tex.
Manhattan: *Aerco Supply Co. 310 East 138th Street	Capital 6-7701

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**Southeastern Division** — B. W. Embry • 152 Ellis Street N.E. • Phone Jackson 5-3755 • Atlanta, Georgia  
**Midwestern Division** — W. C. Andereck • Post Office Box 2564 • Houston, Texas • Phone WA 3-2701  
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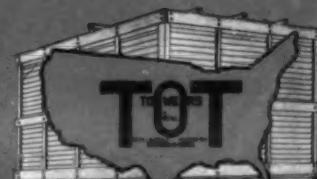
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## Shopping Center

### Important Economies Result from Combining Heating and Cooling

OMAHA, Neb.—Important economies were effected by combining heating and air conditioning throughout The Center, a shopping center here that has indoor sidewalks that are heated in the winter and cooled in the summer.

Billed as "Omaha's newest, biggest, and most modern shopping center," the project includes 40 stores under one roof, arranged in three levels. Customers may drive to any level to park their cars and shop. Total parking space available is sufficient for 1,700 cars.

The main tenant, a branch of Younker's department store, Des Moines and Omaha, occupies approximately half of the 200,000-sq. ft. sales area.

Younker's has its own 300-ton chilled water plant. The smaller stores, however, have individual packaged air conditioners, which also include coils for hot water.

During the winter the stores are heated through the same units that keep them cool in the summer months. All of the air conditioning equipment is on a central cooling tower.

Two 175-hp. packaged hot-water generators (York-Shipley "Steam-Pak" SPW-175-N3) serve the individual air handling units, a fin tube along the ex-

terior wall, unit heaters at the entrances, and a large radiant floor panel of approximately 23,000 sq. ft. in the floor area that overhangs a parking lot. The heating equipment, entirely automatic in operation, is convertible from No. 3 fuel oil to gas firing.

"The owners express themselves as being well satisfied with the service rendered by the two packaged heating units during the first season," it was reported. "Once necessary modifications and adjustments to the burners had been effected, no operating difficulty was experienced."

The hot-water generators were manufactured by York-Shipley, Inc. Natkin & Co., Omaha contracting and engineering firm, handled design and installation of the system. J. & G. Daverman and Kenneth C. Welch were the architects.

### J. M. Traugott Dies

PHILADELPHIA—J. Mortimer Traugott, president of Bryant Air Conditioning Corp., died at his home after a short illness. He was 59.

He founded the company in 1924. He was a member of the Engineers Club, American Society of Heating & Air-Conditioning Engineers, Inc.

### Manufacturers' Representatives

As an industry service, the NEWS maintains a file of manufacturers' representatives—serving the air conditioning, refrigeration, heating, and allied fields. Territories cover all sections of the United States and some foreign countries.

If you are a manufacturers' representative, who wants to change or add to your line, we urge you to take advantage of our special service. If you are already listed with the NEWS, and want to bring your listing up-to-date, you also should send us the following information today (Please use your letterhead):

1. Complete name of your company or individual, address, and phone number.
2. Lines and products now carried (not necessary to list manufacturer represented).
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Box RP-A, 450 West Fort Street  
Detroit 26, Michigan

## High Temperature Heating

### Crosthwait Explains Fundamentals, Lists Advantages and Disadvantages

CHICAGO—D. N. Crosthwait, technical advisor for Dunham-Bush, Inc., presented a fundamental discussion on the subject of high temperature heating to 176 members and guests attending a recent meeting of the Illinois Chapter of the American Society of Heating & Air-Conditioning Engineers.

Crosthwait defined the system as using water at initial temperatures ranging from 300 to 400° F.

He said that if the temperatures remain in the range of 320 to 350° F., standard 125 to 150 p.s.i.g. piping equipment may be used. However, if the temperature is increased to 420° F., piping equipment suitable for 300 p.s.i.g. should be used.

Therefore, from the economical viewpoint, it is well to keep the initial water temperatures below 350° F. so that the conventional heat exchange and piping equipment may be used.

The main difference between the conventional hot water system and the high temperature system is the pressure encountered, the consequently heavier equipment, and the manner in which the water is maintained in the liquid state, it was explained.

When cushioned by steam in the boiler, the system is a hot water system using a steam boiler to heat the water with the supply and return piping connections taken from the boiler below its water line. In this way water flow may occur with the boiler kept under steam.

However, the rate of water flow is about six to ten times higher than that for steam for an equivalent heat load, according to the speaker.

The piping for these systems should preferably be seamless solid drawn steel tubing with welded joints, it was stated. Valves should have stainless steel trim and cast steel bodies.

Some of the advantages of high temperature hot water heating systems were listed as follows:

- a) Smaller pipe sizes for sup-

ply and return piping because of the high pumping head possible at large temperature differences.

b) Heat storage permits peak loads to be balanced by the heat stored in the system.

c) Control is flexible. Temperatures at various locations may be varied independent of boiler pressure.

d) Application in radiant panels, convectors, and coils using simplified equipment to provide the desired water temperatures.

Some of the disadvantages of high temperature hot water heating systems were listed as the following:

a) A longer time is required to heat or cool the system because of the large amount of its mass.

b) Circulating pumps should operate continuously and there should be duplicate pumps installed for each individual pump.

c) Where high temperatures are to be followed, in the range of 300 to 350° F., it is necessary to use flow temperatures about 350 to 400° F. which will require more expensive piping, valves, and fittings.

Crosthwait concluded his presentation by stating that each plant presents many different problems, conditions, and objectives. The requirements of each installation and all the factors that must be properly studied, weighed, and judged will result in the type of system that will best serve the needs, providing it is adequately and properly designed and installed, he commented.

## Heating, Cooling Group Announces Program of Public Education

LOS ANGELES—A program of public education in heating and air conditioning standards through advertising and public relations was announced recently by the Institute of Heating & Air Conditioning Industries.

The announcement was made by R. E. Harkens, Managing director, who said the ad campaign was to be launched in leading southern California newspapers Jan. 13, and continue throughout the year.

"Our interest is to inform the home-owning and home-buying public about the essentials of good heating and air conditioning installations. Ruinous overcompetition has been responsible in some cases for inferior installations to the detriment of the consumer. We believe that industry is best served by an informed public and that the newspaper is the ideal medium for disseminating information."

Harkens said the institute, which represents manufacturers, suppliers, and contractors, has retained Hixson & Jorgenson as its advertising agency and Joe Alvin & Co. as its public relations firm.

The institute's "PR" program, Harkens disclosed, visualizes enlisting the aid of leading colleges and universities for the gathering and dissemination of vital facts on human comfort and the indoor climate.

### Firm Opens Outlet

CLEVELAND—To speed up service to its customers throughout the east coast area, Reliance Electric & Engineering Co. here, manufacturer of electric motors and variable-speed drives, has opened a distribution center in Elizabeth, N. J.

## Edwards—CO-AXIAL CONDENSERS



A TYPICAL CONFIGURATION—EFFICIENT, COMPACT DESIGN

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- Many compact shapes

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For more information about products advertised on this page use Information Center, page 20.

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- No costly maintenance
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**AIR Refrigeration**

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## What's New



### Vic Adds Larger Air-Cooled Chillers

KEY NO. G-140

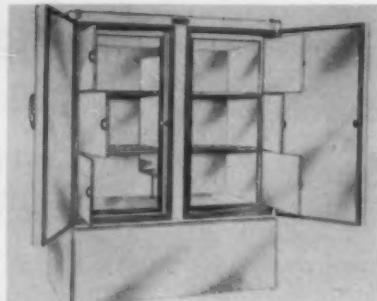
MINNEAPOLIS—Vic Mfg. Co. recently offered two larger versions of its air-cooled refrigerated water chiller in 5 and 7½-ton sizes.

The units cool and re-circulate only a small amount of water, the company avers. It is claimed the chillers give full capacity with ambient temperatures to 115° F.



KEY NO. G-141

THIS new 14-cu. ft. Admiral Corp. upright freezer (14U90) contains four fast-freezing shelves, full width glide-out storage basket, and new door shelf treatment. Pop-out dispenser racks in "Pantry Door" make frozen food selection convenient. Modern T-square styling makes the cabinet suitable for custom installation. All models in the 1957 freezer line are styled in tarnish-proof classic copper and have two-color interiors—princess pink and snowy white.



### Foster Introduces '57 Upright Line

KEY NO. G-142

HUDSON, N. Y.—Foster Refrigerator Corp. recently announced its 1957 line of upright freezers.

Foster's four basic remote models and seven basic self-contained units are now available with the "Fostermatic" automatic defrost systems, in addition to standard low price plate coil models.

Unit LR40-U AD, a 40-cu. ft. freezer, is designed for regular food storage, it was noted.

Air Conditioning & Refrigeration News, January 28, 1957

### Cyclotherm Boilers Conform to N.Y. Code

KEY NO. G-143

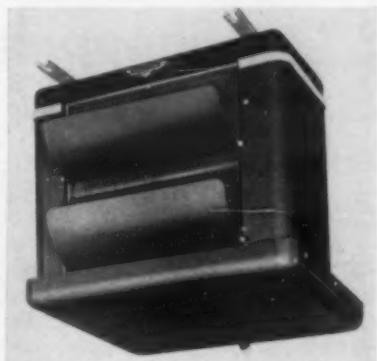
OSWEGO, N. Y.—Two new high-pressure steam boilers designed to conform to New York City code requirements were recently introduced here by Cyclotherm Div., National-U. S. Radiator Corp.

Fully automatic with capacities of 50 to 60 hp. with 98 sq. ft. of heating surface, the new units burn No. 4 oil, light oil, gas, or a combination oil or gas, the company said.

Air is forced into the firetube at a tangent at velocities of up to 200 m.p.h., the company explained. This air assumes cyclonic shape and motion. Then atomized fuel is injected into the cylinder, ignition coordinated, and the vaporized fuel follows the air current path to form a flaming vortex spiraling the length of the tube.

Flame is separated from the wall by an air cushion to prevent hot spots and flame impingement, it was stated. Units can deliver up to 2,000 lbs. of steam at 212° F. feedwater every hour. There are five connections for installation.

Of horizontal, two-pass construction with centrally located furnace around which return tubes are arranged concentrically, boilers of the "Steam Generators" are steel, electrically welded. All high-pressure units are stress-relieved, it was pointed out.



### Larkin Improves 'Humi-Temp' Units

KEY NO. G-144

ATLANTA—Larkin Coils, Inc. recently improved its line of standard "Humi-Temp" units, according to the manufacturer.

New model MT-320 with capacity of 32,000 B.t.u.h. at 10° TD is among the 11 models in the line. Numbers on units now designate capacity, the company explained, and fans in large capacity units have been reduced from three to two.

Bolted construction permits easy access to all parts. The case is made of heavier gauge aluminum for more strength, it was stated. Streamlined styling encloses the cross-fin coil with staggered tubing. Other features include a heavily insulated non-sweat drip pan, rustproof aluminum case, vibrationless fasteners, adjustable louvers, and slotted hanger bars.

### Whirlpool Has Mobile Electric Dehumidifier

KEY NO. G-145

ST. JOSEPH, Mich.—A compact, mobile electric dehumidifier has been introduced by Whirlpool Seeger Corp.

Mounted on swivel casters, the RCA Whirlpool "Imperial" dehumidifier cabinet is finished in "mar-proof" two-tone green baked-on enamel with gold-colored perforated metal grille. It occupies less than 2 sq. ft. of floor space, the company claims.

Providing humidity control for closed areas up to 40 by 30 by 10 ft., the dehumidifier is said to remove up to 3½ gal. of moisture in 24 hours. It will plug into any adequately wired 115-v. outlet.

The porcelain enamel water container is accessible through the back of the cabinet. For automatic drainage, the unit may be placed directly over a drain. A garden hose connection lets water be directed to a drain.

The unit measures 12 by 17¾ by 20½ in., the firm stated. A "Deluxe" portable unit of the same dimensions is also available.

### Information Center

For more information on What's New products, current literature and catalogs available, equipment advertised in AIR CONDITIONING & REFRIGERATION NEWS use Key Numbers where designated or specify products advertised and we'll see that you receive this information promptly.

#### Products Advertised (list name, page, and issue date)

#### What's New or Current Literature Available

Key No. ....	Key No. ....
Key No. ....	Key No. ....
Key No. ....	Key No. ....
Key No. ....	Key No. ....
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these application engineers are equipped to give you full cooperation

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**Upper New York State**—Milton C. Matthews, P.O. Box 612, Rochester 2, N. Y., Phone: Browning 2143  
**Cleveland Area**—Commercial Electric Co., 1250 St. Clair Ave., N.E., Cleveland 14, Ohio, Phone: Cherry 1-2886  
**Chicago Area**—Spartan Engineering Co., 119 S. Jefferson St., Chicago 6, Ill., Phone: CEntral 6-3905  
**Michigan**—Arthur A. Reed, P.O. Box 11, Royal Oak, Mich., Phone: Lincoln 2-6036.

**Texas-Oklahoma Area**—Allied Components, Inc., Petroleum Services Building, 3918 Harry Hines Boulevard, Dallas 19, Tex., Phone: LAKeside 8-4943  
**St. Louis-Memphis-Little Rock-S. Illinois Area**—R. W. & O. A. Baumann, Jr., 575 Arcade Building, St. Louis, Mo., Phone: CEntral 1-1677  
**Kentucky-Southern Indiana-Ohio (except Cleveland) and Pittsburgh Area**—Row-Con, Inc., P.O. Box 3, Debal Station, Dayton, Ohio, Phone: KEnmore 9152  
**Southeastern States**—Joe E. Parker Company, P.O. Box 367, Northside Station, Atlanta 5, Ga., Phone: MElrose 4-2451



**MARCO INDUSTRIES, Inc.**  
WOMELSDORF, PENNSYLVANIA



## Carbonic Introduces 'Quick-Fill' Dispenser

KEY NO. G-146

CANFIELD, Ohio—"Sodamaster Quick-Fill," a new dispenser for drive-in theaters and other locations requiring peak service in a concentrated time period, was recently introduced here by Carbonic Dispenser, Inc.

Available with up to four single-drink faucets to serve any combination of high, low, and non-carbonated beverages, each faucet of the Quick-Fill is attached to 6 ft. of stainless steel, braided plastic, flexible tubing, the company said. Removing one screw disassembles the faucet which has only one moving part.

Four 5-gal. stainless steel tanks to provide syrup for 2,500 6-oz. drinks are incorporated in the unit, which is said to serve up 3,500 cold 6-oz. drinks during any eight-hour period.

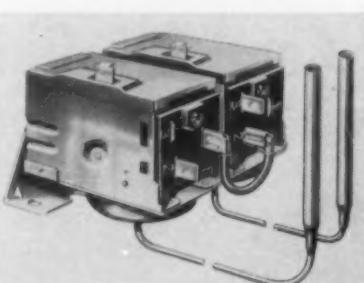
Compact cabinet is finished in gray, hammerloid enamel with stainless steel top which serves as a cup rack, it was added.

## Offers Pressure-Run Conditioning Controls

KEY NO. G-147

COLUMBUS, Ohio—A new group of pressure-operated air conditioning controls were recently developed by Ranco Inc.

New "G" models are suitable for use on control panels on commer-



cial installations, the company said. They include high and low-pressure units with automatic or manual reset, low-pressure cycling controls with differential adjustment, and dual-pressure controls.

A choice of switch assemblies to accommodate varied applications from pilot duty of 345 v.-amps at 230 v. to heavy-duty requirement of 15.5 amps, full load, and 84 amps, locked rotor at 115 v., a.c., it was stated.

Ranges vary from 7 to 425 p.s.i. (non-adjustable). Single-pressure models offer adjustable differentials. All controls are operated by pressure expansion type bellows, opening the contacts on a

## Hot Dog, Cold Drink Merchandiser Produced

KEY NO. G-148

KANSAS CITY, Mo.—A 14-sq. ft. unit called the Manley "Refreshette" which sells hot dogs and cold drinks was introduced here recently by Manley, Inc.

Illuminated merchandising display signs come with the unit, the company said, and hot dogs are spotlighted on a three-heat "Spin-A-Rama" rotary grille which will cook 17 franks each five minutes. It is claimed the grille will hold hot dogs for an hour at low heat.

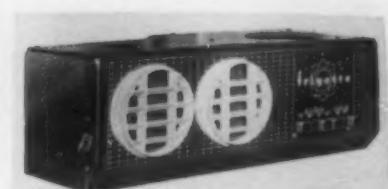
A two faucet "Ice-O-Bar" cold drink machine produces 1,000 cold drinks an hour at a temperature of 40° or less as long as incoming water temperature is less than 80°, the firm noted. Two gravity fed stainless steel multiplex faucets are fed by two 2-gal. stainless steel syrup pans immersed in water bath. Total capacity is 4 gals.

Refrigeration unit is a ½-hp. compressor which builds up a 90-lb. ice bank. An ice bank control



bulb mounted on the cooling coils fixes size of the bank, "guaranteeing" the machine against freeze up, the firm stated. Circulated water is used as a medium of heat transfer between ice bank on one hand and carbonator, syrup pans, and water coils on the other.

A 5-doz. moist heat bun warmer is another feature of the Refreshette, the company said.



## Auto Conditioner Said To Conform to Styling

KEY NO. G-149

OKLAHOMA CITY—A "radical" design change was made in the 1957 model Frigquip Corp. "Frigette" auto air conditioner to conform to present dash styling, the company announced.

Frigette is 6 ¼ in. high, 19 in. wide, and 8 in. deep. It has chrome-finish aluminum faceplate, rotating louvers, and automatic pushbutton controls.

A new squirrel-cage wheel moves cool air throughout the car, it was explained. The unit can be transferred from one car to another. Frigette is thermostatically controlled with electric clutch standard.

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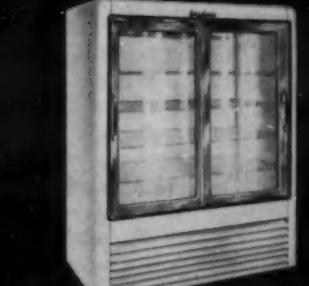
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### REFRIGERATOR WALL CASES



### REFRIGERATOR-FREEZER Combinations



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Delivers a cooling bonus of 310 BTU's per hour.
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Cools 21% faster by actual test—with a totally new Sweep-Cooling concept.
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1 HP, 115 V CAPACITY—6 different styles that eliminate 230 v. line, yet deliver king-sized cooling; save 10% on operating costs.
- **NEW 7½ AMP**  
½ HP, 115 V UNIT—saves 40% on electricity costs, saves rewiring costs, uses less current than a toaster.

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NEWS' classified advertising columns.

(See Page 30)

"mother almost fell  
off her roost when  
she heard what

## MITCHELL

hatched"



## MITCHELL Roto Cone Cooling!

MAKES CONDITIONED AIR COME  
ALIVE, COMPLETELY SURROUNDS  
YOU WITH NATURAL COMFORT

GET ALL THE FACTS FROM YOUR MITCHELL DISTRIBUTOR  
Mitchell Manufacturing Company—A division of Cory Corporation, 3200 W. Peterson Ave., Chicago, Ill.

- Cools 21% faster by actual test. • Tailors the air delivery with an infinite range of settings.
- Exclusive Sweep-Cooling concept sells itself—no hot spots, no clammy areas, no drafts. • Achieves the ultimate in quiet operation.

## Packaged Units Condition Photoengravers

DETROIT—This city now boasts the first fully air conditioned photoengraving plant in the midwest, it has been reported.

A remodeled two-story building at 40 Hague St. was recently occupied by Cadillac Color Plate Co. and its gravure affiliate, Intaglio-Cadillac Co., Inc.

The complete air conditioning system consists of nine American Blower packaged commercial air conditioning units plus allied exhaust fans, humidifiers, and pre-heat coils. Ducts carry the conditioned air to all parts of the building.

The decision to install air conditioning was made, according to Harold M. Towne, president of Cadillac Color Plate, "because it will give us the kind of temperature and humidity control that spells quality in our business. In one department, for example, temperature is held constant within plus or minus 2° F. and humidity within plus or minus 2%."

"Our completely air conditioned plant is the first of its kind in our area and one of the few in the United States," Towne said.

The plant occupies 36,000 sq. ft. of floor space. The two firms employ a total working force of 96.

The air conditioning system was designed by George Wagstaff Associates, Inc., consulting engineers, Detroit.

### Newspaper People 'Anxious' To Work In Conditioned Bldg.

DES MOINES, Iowa—A questionnaire sent out to Des Moines Register and Tribune employees brought in some approving replies concerning the building's air conditioning system.

Twenty per cent of the 204 persons who answered said that the air conditioning "definitely helped" relieve their respiratory ailments.

"Thanks to the powers-that-be who decided upon an air conditioning system for our building," was the most frequent comment.

When asked "Were you comfortable while working this summer?" a resounding 96% replied "yes" and the other 4% didn't answer. There were no adverse replies.

As one employee put it, "I'm actually anxious to get to work."

Many stated that the cool air increased their work efficiency and cut down on the number of "flare-ups" formerly displayed in pre-air conditioning days.

Air conditioning was first put into operation in the building last May 1. Over \$200,000 has been budgeted as operating expense for next year.

### Appliance Firm Moves

DALLAS—J & M Appliance Co. has occupied a new 15,000-sq. ft. brick warehouse in the Brook Hollow Industrial District.

R. A. Flirberg, a J & M partner, said the firm's floor space has been doubled with the move. He added that the company has had a 60% gain in business in the past two years.



ONE of nine American Blower packaged commercial air conditioners used as the heart of the air conditioning system of Cadillac Color Plate Co. and Intaglio-Cadillac Co., Inc. photoengraving plant.

## Cooling Tower Selection Chart Offered To Evaluate Performance

BOSTON—A universal following principles:

"Counter-Flow Cooling Tower Selection and Performance Chart" was described by John Engalitcheff, Jr., president, Baltimore Aircoil Co., at the recent meeting of the ASRE here.

This new chart permits the selection of a cooling tower and the predicting of its performance at various conditions, and also permits the evaluation of the performance of an installed cooling tower.

With one test taken at any operating conditions, it is possible to determine if the tower is delivering its rated capacity and to predict the tower's performance at any other operating conditions.

The chart will be made available to any company wishing to use it, providing the company obtains written permission from Engalitcheff at Baltimore Aircoil Co., Inc., 2615 Mathews St., Baltimore, Md.

The basic heat transfer equation as applied to the cooling tower, said the speaker, is:

Rate of transfer = transfer coefficient X transfer area X mean driving force (MDF).

The chart is based on the

a. Performance or efficiency of the cooling tower is the ratio of the heat transferred by the given tower to that which would be transferred by the tower which has been taken as a base or unit of measure when both of these towers are operated under the same MDF and at the same g.p.m.

b. A 100% tower, or a base tower which has been taken as a unit of measure, is a tower which will cool 3 g.p.m. of water from 95 to 85° F. with a 78° F. wet bulb air. This is equivalent to 15,000 B.t.u. per hour heat rejection and is called a "one-ton tower."

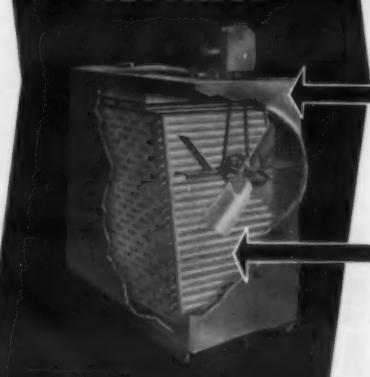
c. The Stevens Method is the most nearly correct way to figure MDF.

d. The heat transferred by a given tower is proportional to the MDF provided the water and air quantity remain the same.

"The chart will help you to determine how much load you will handle and how much range you will have," Engalitcheff said. "It is designed to cover changes in the air and change of water."

SO HALSTEAD & MITCHELL  
ENGINEERS SAID:

### "LET'S STOP COOLING TOWER RUSTING and ROTTING!"



Halstead &  
Mitchell

BESSEMER BUILDING,  
PITTSBURGH 22, PA.

### RUSTING

There's no "one-coat" protection which will stop cooling tower rust. Needed are super-strength bonding of protection to metal, toughness, inertness, flexibility, and a water-tight barrier. Only by Halstead & Mitchell are you offered the 3-coat protection of Vinsynite, Vinyl Zinc and chlorinated rubber—the most advanced protection ever devised to prevent cooling tower steel from rusting.

### ROTTING

We do more than praise the long life of wood used in our wetted decks—we are the only manufacturer who offers a 20-Year Guarantee on wetted deck wood against rotting or attack by fungus.

AT LEADING WHOLESALERS EVERYWHERE

## Air Conditioning

### U.S. Planning Air Conditioning for 11 Federal Buildings In Capital, 7 States

WASHINGTON, D. C.—General Services Administration has awarded engineering contracts for the design of air conditioning systems for installations in 1957 in four Federal buildings in Washington, D. C. and Virginia at an estimated over-all cost of \$2,560,000.

Franklin G. Floete, Administrator of General Services, announced the contracts. The buildings are listed below with the names of the consulting engineers and the estimated over-all cost of the completed installations.

Veterans Administration building, Washington, D. C.; Wilberding Co., Inc., Washington; \$2,100,000.

U. S. Custom House and Court House, Alexandria, Va.; C. Warren Bogan & Associates, Washington; \$165,000.

U. S. Post Office and Court House, Charlottesville, Va.; J. Robert Carlton, Richmond, Va.; \$105,000.

U. S. Post Office and Court House, Lynchburg, Va.; J. Robert Carlton, Richmond; \$190,000.

#### BIDS DUE FROM APRIL TO JULY

The design schedules indicate that plans and specifications will be prepared in time to receive construction bids on the Alexandria installation in April, the Washington installation in June, and the Charlottesville and Lynchburg installations in July.

Floete also announced that the GSA has entered into contracts for the design and engineering of six air conditioned Federal buildings approved for construction by private financing with purchase contracts in six states.

The contracts are for architectural and engineering services necessary to the construction of new Government buildings in Laurel, Miss.; Sisseton, S. D.; Terrell, Texas; Manning, estimated cost of \$372,000.

S. C.; Camden, Ala.; and Ronceverte, W. Va. The structures will be designed to provide new quarters for the Post Office and space for other agencies.

#### PROJECTS IN 6 STATES

Project in Laurel, approved at an over-all cost of \$829,000, will provide an air conditioned building of approximately 38,900 sq. ft. of gross floor area for a post office with additional space for the Civil Service Commission, and the Departments of Agriculture, Army, and Treasury.

Sisseton project, approved at an over-all cost of \$530,000, will provide an air conditioned structure with 19,800 sq. ft. floor area for the Post Office and other space for Departments of Agriculture and Interior.

In Terrell the project will provide air conditioned area of 15,700 sq. ft. for the Post Office with Department of Agriculture space. Approved over-all cost is \$394,500.

Project in Manning, approved at an over-all cost of \$368,570, will provide an air conditioned building of nearly 16,800 sq. ft. for the Post Office with other space for the Department of Agriculture.

Camden's air conditioned building, approved at over-all cost of \$277,000, will contain about 12,600 sq. ft. for the Post Office and Department of Agriculture.

Approved at over-all cost of \$265,000, project in Ronceverte will provide an air conditioned structure of about 10,400 sq. ft. for the Post Office with additional space for Departments of Air Force and Treasury.

Earlier, the GSA announced that Yandell, Cowan & Love Engineering Co., Fort Worth, Texas, has been awarded a \$12,650 contract to design an air conditioning system for the Federal court house in that city. GSA said the project has an estimated cost of \$372,000.

### PRIMORE AUTOMOTIVE AIR CONDITIONING VALVES

are rapidly becoming the standard of the industry



#### Here's why—

- Designed especially for Automotive use
- Precision manufactured
- Hydrogen brazed steel construction cuts costs

Primore's engineers have designed a series of Compressor Pad Valves and fittings especially for Automotive Air Conditioning units.

In addition, Primore engineered valves are also available for automotive air conditioning components such as Condensers, Receivers, Evaporators, etc.

#### NEW PRIMORE REFRIGERATION VALVE CATALOG NOW AVAILABLE

Complete details and data for Household and Commercial Refrigeration, Residential and Automotive Air Conditioning valves and fittings. Write, or phone for your copy.



**Primore Sales, inc.**  
310 National Bank Bldg. Adrian, Mich.  
designing • sales • engineering

For more information about products advertised on this page use Information Center, page 20.

### Calif. Art Gallery To Be Conditioned by Zoned Central Units

LOS ANGELES — Construction is under way on the new \$500,000 Art Gallery and Library for the Los Angeles County Art Institute located near MacArthur Park here, in central Los Angeles.

A feature will be complete air conditioning to maintain temperature control for Art Gallery patrons, as well as the paintings and art objects to be displayed. The building, designed by Austin, Field & Fry, architect and engineer, will be completed by May, 1957.

The ground level consists of an expansible gallery, accommodating approximately 70 people. It can be divided into two separate galleries as desired by the use of special sliding doors.

Two sculpture studios will be located on the second floor.

For the air conditioning phase, central-plant air conditioners manufactured by Drayer-Hanson and separately zoned to give simultaneous—or varying—degrees of heating or cooling to individual areas, will handle main-floor and second floor heating and cooling, ventilating, and filtering.

Each of the two units, designated "Flexazone," is contained in its own equipment room.

Separate installations of Drayer-Hanson air handling units, comprised of three ceiling-suspended HH-Series types, will condition storage facilities in the basement, and afford temperature and humidity control for the library.

Also in the basement is a mechanical equipment room, containing central-plant boiler and compressor equipment which is matched with D-H air handling units. Ample space is provided to house equipment needed for future expansion.

Air Conditioning Supply Co., Los Angeles, area distributor for the national manufacturer, sold the equipment to Stanley Feuer Co., installing contractor.

### Conditioned Post Office Draws Postal Inquiries

MCLEAN, Va.—Since it was dedicated earlier this year, McLean's handsome new post office has been receiving more than the usual amount of attention from postal people. Interest has centered on the fact that the postal building is equipped throughout with a modern summer and winter air conditioning system.

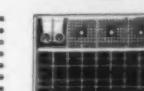
The building is considered unique in its field because both its customer service and mail handling sections are completely air conditioned in the latest up-to-date fashion. Consequently, it is said, many postmasters of the country have been inquiring concerning the design, layout, and operation of the McLean cooling and heating system.

Installed by Perrin and Martin Co., Falls Church, Va. air conditioning firm, the cooling system consists of an Airtemp 11-ton "packaged" air conditioner working in conjunction with a series of ceiling diffusers. A boiler for winter heating completes the installation.

**7 COMPLETE SERIES 31 MODELS**



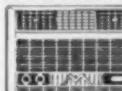
Pancake  
Low and thin  
1/2, 1 hp.



Ultra-Thin  
Thinnest unit yet  
1/2, 1, 1 1/2 hp.



Casement  
Rated 1st in cooling power  
1/2, 1 hp.



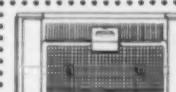
Power Pack "24"  
2 foot narrow  
1/2, 1 hp.



Roto Cone  
New Sweep-Cooling feature  
1/2, 1, 1 1/2, 2 hp.

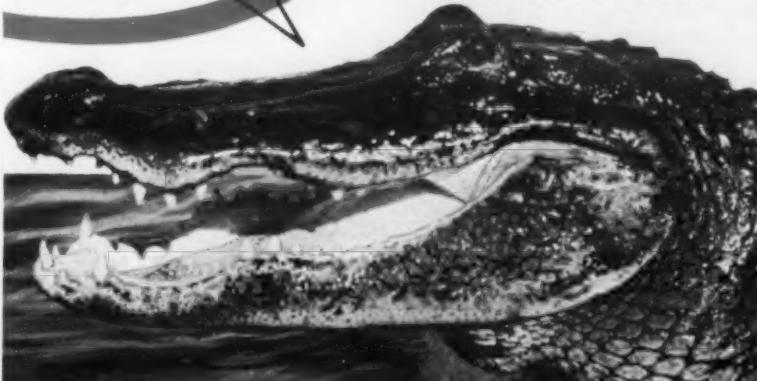


Advance  
Hottest prices in air  
conditioning  
1/2, 1 1/2 and 2 hp.



Imperial  
The world's most powerful  
room air conditioner  
1/2, 2 hp.

GET ALL THE FACTS FROM YOUR MITCHELL DISTRIBUTOR



Mitchell Manufacturing Company—A division of Cory Corporation, 3200 W. Peterson Ave., Chicago, Ill.

ARE you in need of a "just right"

man to fill a slot in your organization—the man you are looking for will be reading the

#### NEWS' CLASSIFIED ADS

(See Page 30)



### "MITCHELL"

'operation saturation advertising' is bigger than both of us!"

IT'S THE LARGEST  
(OVER \$1,000,000 LOCAL  
DOLLARS) LOCAL CAMPAIGN  
EVER AIMED AT YOUR MARKET

- Packs the punch of over 1,000,000 local lines and local dollars. • Pyramids the power of newspapers, radio and television into volume sales profit. • 100% distributor paid, if you act now! • Sell the big plus: Roto Cone, the exclusive Sweep-Cooling concept that sells on sight.

GET ALL THE FACTS FROM YOUR MITCHELL DISTRIBUTOR

Mitchell Manufacturing Company—A division of Cory Corporation, 3200 W. Peterson Ave., Chicago, Ill.

## Men on the Move . . .

**Mueller Climatrol, Div. of Worthington Corp.**—Curt Hoerig has been named manager of manufacturing and Carl Quick general superintendent. Hoerig was formerly assistant to the vice president in charge of manufacturing; Quick, industrial relations director. William S. Sutherland, assistant advertising manager, has been promoted to advertising manager of the firm.

**Permglas Div., A. O. Smith Corp.**—J. W. Burleson has been promoted from assistant sales manager to general sales manager of Permglas home heating and air conditioning equipment.

**Penn Controls, Inc.**—Grover M. Russell was appointed design engineering manager. He has been project engineer of the design engineering section.

**Amana Refrigeration, Inc.**—Harry King, dealer development manager in the Cleveland area, has been promoted to regional sales manager for the firm's Minnesota

territory. He succeeds Alfred E. Burchard, resigned.

**H. R. Basford Co.**—Otto B. Barth has been named sales manager of the Special Products Div. of this organization which markets Ruud Mfg. Co. gas water heaters, home heating appliances, and air conditioning equipment. He has been wholesale sales representative for the laundry equipment which Basford makes.

**Haverly Equipment Div., John Wood Co.**—Francis C. Ortner has been named general sales manager to supervise the firm's national sales force with responsibility for extending sales of farm bulk milk coolers in areas not previously served by Haverly. He formerly had his own distribution organization.

**Recony Corp.**—Donald D. Stover, formerly with Worthington Corp., will be in charge of development engineering for the firm's line of gasoline and electric powered mobile air conditioning units and

other specialized refrigeration and air conditioning units.

**L.O.F. Glass Fibers Co.**—Robert T. Bailiff has been named sales promotion manager. Previously he was a customer service assistant with the same firm.

**Frigidaire Div., General Motors Corp.**—Ober L. Wortz has been appointed manager of Frigidaire's New Orleans branch, succeeding Fred Hartner, retired. James R. Cobb has been named special representative for the southeastern area of the firm's eastern sales division, replacing Wortz. Cobb has held several executive sales posts with Frigidaire, including laundry equipment, power supplier, and rural sales operations.

**Freez King Corp.**—Appointment of A. H. Allen, Mark M. Evans, and John P. Moran as regional sales managers has been announced by the company. Allen worked 18 years with Mills Industries, Inc., most recently as a zone sales manager. Evans was a representative for Mills and Moran a zone manager with the same firm.

**General Electric Co.**—C. V. Phillips, formerly manager of major accounts for the appliance and television receiver division, has been named manager of dealer relations. J. E. Wiegel has been appointed regional dealer relations manager of the Central-Great Lakes area and P. H. Weil, regional dealer relations manager for the eastern-southern region.

**Bryant Mfg. Co.**—Gerald F. Deer has been appointed sales training manager. Before joining Bryant, Deer held various sales posts with Stewart-Warner's U. S. Machine Div.

**Mitchell Mfg. Co., Div. of Cory Corp.**—Appointment of Harold Kreegel as district sales manager for Mitchell room and package air conditioners in Florida south of Jacksonville has been announced. He formerly was in the contracting business in Washington, D. C. He replaces Herb Rose.

**Perfection Industries Div., Hupp Corp.**—Alan H. Jobson, Jr. has been named district manager of the New York City area. He will be responsible for sale of Perfection appliances and air conditioning units in the metropolitan area, including Long Island, northern New Jersey, and southern Connecticut. Jobson formerly was dealer development manager for Amana Refrigeration, Inc. there.

**Mott Body Mfrs., Inc.**—Jimmie McClinton has been named president of this Americus, Ga. firm which makes refrigerated truck bodies.

**Joseph Davis, Inc.**—William E. Maloney has been elected vice president of this Buffalo air conditioning contracting company. An engineer, Maloney has been with the firm since 1945.

**Delco Products Div., General Motor Corp.**—G. F. MacFarland has been appointed assistant chief engineer. He has been manager of new devices and developments.

Robert W. Leland has been named engineering manager of all electrical products for Delco. He has been serving as staff engineer. George W. Jackson has been appointed engineering manager for all automotive and mechanical products of the firm. He also was a staff engineer. Irving M. Levy assumes the post of consulting engineer with the company. He previously was assistant chief engineer. Harry F. Dixon has been promoted from supervisor of production control to superintendent of production planning at the Kettering plant, although he will remain in charge of production control. He replaces the late W. C. Hosket. Lee W. Anderson, foreman of production control, has been named supervisor of production control, industrial motors and generators at the Kettering plant.

**W. G. Morton, Inc.**—Appointment of Kenneth H. Boynton as sales manager of the air conditioning division has been announced. Morton is an associate manufacturer and distributor of Mathes air conditioning equipment in New England and upper New York state with sales offices located in Boston, Hartford, Conn., and Burlington, Vt., as well as the home office in Albany, N. Y. Prior to his appointment, Boynton was sales manager, Consumer Products Div., Westinghouse Supply Co. Morton holds open house to dealers for a showing of its 1957 room air conditioner line in Albany on Jan. 22, Boston, Jan. 24, and New Haven, Jan. 28.

**A. O. Smith Corp.**—J. J. Stahl has been appointed assistant regional manager for the firm's eastern district. He formerly was sales manager for electric motors in the company's Pacific Coast district.

**Admiral Corp.**—Carl E. Lantz has been named executive vice president of Admiral Distributors and will direct operations of several distributing branches around the nation. He succeeds Clarence Tay who is on leave of absence. Lantz was named Tay's assistant last year.

**Crane Packing Co. (Morton Grove, Ill.)**—This manufacturer of shaft seals and sealing compounds has announced four executive promotions. Carl E. Schmitz was upped to executive vice president from vice president-sales. Vance E. Vorhees was named vice president-sales from his former capacity as assistant general sales manager. E. H. Stenberg was promoted from works manager to vice president-manufacturing. E. H. Stubenrauch moved from divisional sales manager to assistant general sales manager.

**Bryant Air Conditioning Corp.**—Burton M. England, former vice president and sales manager was elected president of this Bryant products distributor succeeding J. Mortimer Traugott, founder, who died recently. Other officers elected were Charles K. Nice, executive vice president; John A. Tweed, vice president and treasurer; John A. Whippes, vice president; J. M. Traugott, Jr., vice president; and Karl Frank, secretary.

**R. D. Marshall & Co., Inc. (Albany, N. Y.)**—A. M. Schmitz has been named sales manager of this refrigeration and air conditioning supplies wholesaler. He formerly was with Copeland Refrigeration Corp. and Servel, Inc.

## Pennsalt Offers 'Isotron' Refrigerants Made In New Plant; Second Due

**PHILADELPHIA** — Completion of a major plant addition at Pennsalt Chemical's Calvert City, Ky. works marked the introduction of "Isotrons"—the company's new line of aerosol propellants and refrigerant gases.

Pennsalt President William P. Drake announced that a second Isotron unit is under construction and scheduled for completion later this year. Both projects are part of a \$55 million expansion program.

The main features of the process are the vapor phase catalytic converters which produce the non-toxic Isotrons from hydrofluoric acid and carbon tetrachloride feed materials," it was explained. "The new unit is fully instrumented so that the entire process is operated from a central control room.

"Major components of the plant are its distillation and drying systems designed to meet the high purity specifications and exacting moisture control requirements of Isotrons.

"A nationwide marketing team of Pennsalt salesmen and manufacturers' agents has already been developed to handle sales of the Isotrons to the contract and private label fillers of the aerosol industry and to the original equipment manufacturers and service replacement representatives of the air conditioning and refrigeration industries.

## Cooling, Refrigeration Distributor Sales Up 6% In First 11 Mos. of '56

**WASHINGTON, D. C.** — Air conditioning and commercial refrigeration equipment distributor sales rose 6% during the first 11 months of 1956 as compared with the similar period the preceding year, according to the wholesale trade report of the Bureau of the Census.

Distributor sales in November of last year moved 1% upward from the same month in 1955, but were slashed 10% from October, 1956. Inventories were 2% below November, 1955.

Electrical appliances, television, radio sets, and electronic parts distributor sales jumped 4% in the first 11 months of 1956 as compared with the same 1955 period. Sales were up 1% over October and remained at par with the preceding November, the Census Bureau said. Inventories were 1% below those of the previous month, but 25% higher than those of November, 1955.

## Fluor Produces Cooling Tower for Central Units

**WHITTIER, Calif.** — Fluor Products Co., division of Fluor Corp., Ltd., recently announced that volume production of a Series 3 cooling tower, first in a series of four basic models, is under way.

Designed specifically for central station air conditioning and refrigeration systems in commercial and industrial plants, the tower is furnished in a multiplicity of cell sizes.

**HIGHSIDE or LOWSIDE**

**heat-x**

**Refrigeration and Air Conditioning Products**

**mean a better installation**

The Heat-X line includes components for refrigeration and air conditioning systems as well as completely "packaged", ready-to-operate units . . . all in a wide range of sizes and capacities to fill a broad variety of contractors' needs.

All Heat-X equipment is soundly constructed, conservatively rated and features the most advanced engineering design.



**'CIC' CONDENSERS** An efficient water-cooled refrigerant condenser. Entire water circuit is of non-ferrous construction with cleanable tubes. Inner-fins in refrigerant tubes insure high heat transfer . . . occupy minimum space. FROM  $\frac{1}{2}$ –15HP

**CAST COOLERS** Refrigerant and liquid circuits are cast in solid block of aluminum, eliminating freeze-up problem . . . offering advantages of "hold-over" effect of cooled aluminum mass. FROM 15–65 GPH (@ 70°)

**HEAT INTERCHANGERS** Cast aluminum heat interchangers ( $\frac{1}{4}$ –10HP) and heavy duty heat interchangers ( $7\frac{1}{2}$ –100HP) feature patented inner-fin construction in suction line. Units feature low freon charge and no oil trapping.

**'OSM' OIL SEPARATOR MUFFLERS** These units solve two problems common to refrigeration systems: silencing of system noises and separation of all entrained oil. No floats to bang open or stick closed. 'OSM' units are equipped with a positive-action Velocity Pressure Mechanism, 1-75 TONS exclusive with Heat-X.



Bulletins containing complete specifications FREE on request

**HEAT-X, Inc.**

BREWSTER • NEW YORK

Cable "BUSHEATX", Hartford, Conn.

For more information about products advertised on this page use Information Center, page 20.

**AIR-CONDITIONING MOTORS NEVER BURN OUT when protected with**



**MECHANICAL INDUSTRIES PRODUCTION COMPANY**  
223 ASH STREET • AKRON, OHIO

**HYLO MODEL CS**

**CONDENSATE PUMPS**

- TWO INCH DRAIN
- MAGNETIC CONTROL
- HEADS TO 20 FT.
- COMPLETELY WIRED
- 115 V. OR 220 V.

WRITE TO

**EDDINGTON METAL SPEC. CO.**  
EDDINGTON, PA., U.S.A.

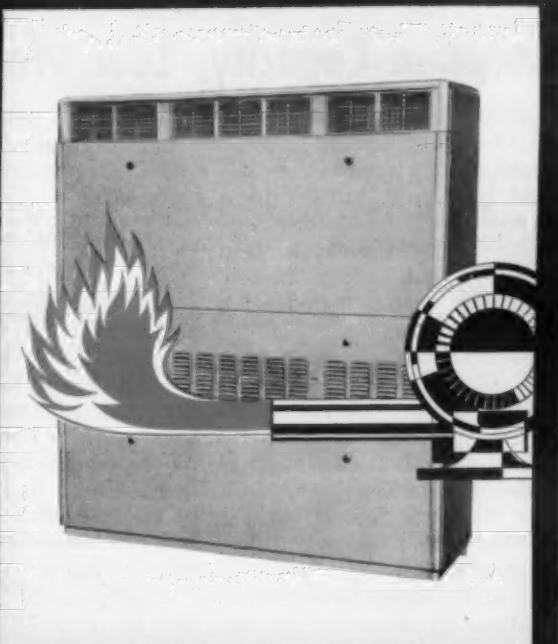
# For the First Time— The News Earmarks Two Big Issues for Heating and Air Conditioning Show

## PRE-SHOW ISSUE!

For the first time, AIR CONDITIONING & REFRIGERATION News will devote two separate issues to cover the 13th International Heating & Air Conditioning Exposition to be held in Chicago, February 25 through March 1. The February 4 issue of the News will carry complete pre-show information. So, if you are among the exhibitors, this is your chance to tell your prospects and customers about the products you will display and your location at the show. Take advantage of this big pre-show roundup. Reserve your space now—enough to tell your whole story—to pre-sell your prospects for maximum show results.

## SHOW ISSUE!

First day of the exposition the AIR CONDITIONING & REFRIGERATION News Show Issue will be distributed to exposition visitors. For advertisers in the Show Issue it represents a bonus circulation of many thousand. But—equally important—is the added readership, added interest in the exposition roundup issue. Those attending the exposition will consult the advertisements frequently to line up their "things to see" agenda. Those unable to be there will attend the show through the pages of the News. Either way, your advertisement will get maximum attention, maximum readership. Now is the time to reserve your selling space.



## A Special Merchandising Offer to NEWS Advertisers

1. Special "As Advertised In AIR CONDITIONING & REFRIGERATION NEWS" placards for your products on display at the Heating & Air Conditioning Exposition inviting passers-by to read your complete selling story.

2. Copies of the News—at reduced rates—in which your advertisement appears for mailing to customers and prospects you select.

3. Reprints of your advertisement will be available at cost. Ask your News representative for suggestions on how you may take advantage of the special merchandising service of the News, both at the show and afterward.

## CIRCLE THESE DATES ON YOUR CALENDAR

Pre-Show Issue publication date: February 4, 1957  
Exposition Issue publication date: February 25, 1957  
Last forms close: 10 days preceding the date of issue  
  
Don't miss this selling opportunity during the Heating & Air Conditioning Show.



## AIR CONDITIONING & REFRIGERATION

The Newspaper of the Industry



# NEWS

450 WEST FORT STREET, DETROIT 26, MICHIGAN

THE NEWSPAPER THAT CARRIES MORE ADVERTISING  
BY FAR THAN ANY OTHER PUBLICATION IN THE FIELD.

NEW YORK, 521 FIFTH AVE.  
MURRAY HILL 2-1928-9.  
ROBERT M. PRICE.

CHICAGO, 134 S. LA SALLE ST.  
FRANKLIN 2-3093.  
ALLEN SCHILDKRAMMER.

LOS ANGELES, 4710 CRENSHAW BLVD.  
AXMINSTER 3-9681.  
JUSTIN HANNON.

DETROIT, 450 WEST FORT ST.  
WOODWARD 2-0924.  
J. B. SULLIVAN.

## Molecular Sieves Desiccant Said To Have High Water Adsorption Capacity, Low Water Concentration at 212°

NEW YORK CITY—Molecular Sieves, a new desiccant for refrigerant drying applications developed by Linde Air Products Co., Div. of Union Carbide and Carbon Corp., has been field tested and laboratory tested, and is now finding application in the industry.

Molecular Sieves have a high water adsorption capacity at very low water concentrations and also at high temperatures (as high as 212° F.), Linde officials report. The material is termed "a very special type of adsorbent with a highly selective nature."

Extremely small pores in the crystalline structure of the new desiccant exclude both refrigerant and oil molecules from the adsorption surface, and thus the

entire surface is used solely for water molecules, resulting in high drying capacity, it is claimed.

### CAPACITY MEASURED ON WEIGHT-% SCALE

Molecular Sieves capacity is measured on a weight-per cent scale (lbs. of water adsorbed per 100 lbs. of adsorbent). Under typical operating conditions with a concentrate of 10 p.p.m. of residual water in Refrigerant-12, and a temperature of 140° F., Molecular Sieves are said to have a 19 weight-per cent capacity.

According to Linde officials, this is up to 19 times more capacity than some of the most widely used silica-type adsorbents. This means that Molecular

Sieves can extend the service life of standard size driers by many times, or that equipment design improvements can be made through use of smaller driers, it is pointed out.

Case histories gathered thus far by Linde show the following variety of reasons for the selection of Molecular Sieves.

### CITE REASONS FOR USE

1. Space saving for auto air conditioners.
2. For effective drying in units located in small hot motor compartments.
3. To increase the capacity of the drying cartridges.
4. Because adsorption characteristics are not affected by compressor oil; and acids are removed completely by co-adsorption with water.
5. Because Molecular Sieves do not cause catalytic breakdown of refrigerants, and high capacity is preserved even in Refrigerant-22.

The McIntire Co., which has been supplying filter-driers to the refrigeration industry since 1925, started to explore the possibilities of Molecular Sieves in 1955. McIntire's new "Perma-sorb-100" line of filter driers are charged with it.

Linde officials state that McIntire in its field tests found a high moisture capacity factor under the most severe operating conditions—in refrigerant-oil mixtures at high temperatures.

Tube Manifold Corp., manufacturer of receiver-driers for automotive air conditioning and receivers for commercial air conditioning and refrigeration systems, has been using test units incorporating Molecular Sieves for more than a year.

Tube Manifold is said to have found that the new desiccants in some cases will do the drying job with one-tenth the amount of material used previously, and that it held up in performance up to 100,000 miles on truck cab installations.

A major midwestern manufacturer of refrigeration equipment conducted laboratory and field tests, and reported the following:

(a) In tests at temperatures of up to about 200° F., Molecular Sieves Type 4A was the only desiccant with a significant drying capacity for water in Refrigerants 12 and 22. The company believes that it can now do an effective drying job on units which must be located in small hot motor compartments.

(b) The company found that Molecular Sieves have an unusually high capacity for acids, both organic and inorganic.

(c) It was found that cartridges charged with spherical-form Molecular Sieves produced an extremely small pressure drop across the refrigerant lines. The conclusion was reached that a drier of any size using the new desiccant can be left on the system after the initial drying period without any loss of efficiency.

(d) The tests showed that Molecular Sieves resist mechanical breakdown in service, the hard spherical pellets resisting

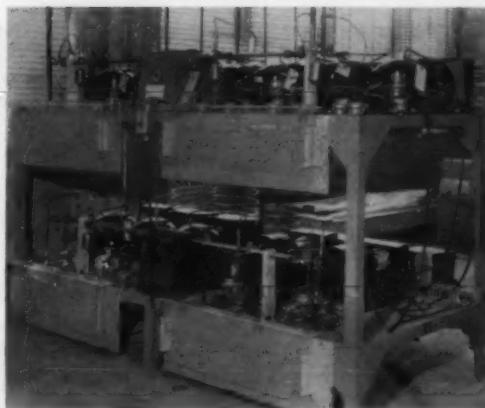


FIG. 1—This is one of several test setups used on test installation for domestic refrigerator units. These particular units were operated for 1,500 hours.

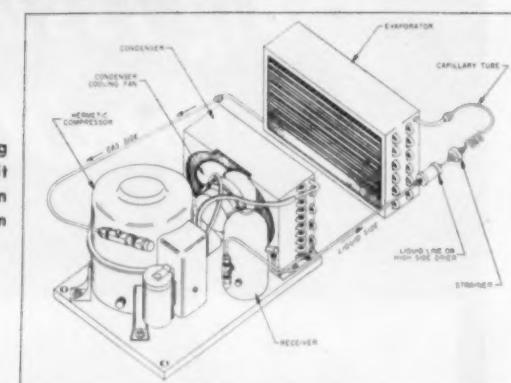


FIG. 2—Schematic drawing of typical refrigerator unit shows location of drier in liquid line, upstream from the evaporator.

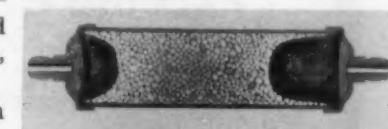


FIG. 3—Crystal model, Molecular Sieve type 4A illustrates small uniformly-sized pores.

both abrasion and entrained water without attrition losses, it was explained.

In experimental evaluation tests of Molecular Sieves Type 4A in Linde's Tonawanda Laboratories, it was found that in drying Refrigerant-12 to a residual water content of 10 p.p.m. at 100° F., Molecular Sieves have a water capacity of 18.3 weight per cent (pounds of water adsorbed per 100 lbs. of activated adsorbent). When the temperature of the system is raised from 100° F. to 140° F., the water capacity was 19.2 weight per cent.

In tests made with 5 weight per cent compressor oil in a Refrigerant-12 system, the water capacity was 17.5 weight per cent, almost as high as when no oil was present.

### DETERMINES UNIT'S ACID CAPACITY

To determine the acid capacity of Molecular Sieves, the following procedure was used. Dry hydrogen chloride was bubbled through Refrigerant-11 liquid, cooled with an acetone-dry ice mixture. The low temperature aided solubility of the hydrogen chloride in the Refrigerant-11 liquid and reduced the volatility of the solution.

After the solution had been warmed to a temperature of 75° F., a weighed quantity of Molecular Sieves was added. The desiccant and solution were agitated for 96 hours. The residual hydrochloric acid was extracted with water and titrated with 0.1 N sodium hydroxide using bromothymol blue as an indicator.

Molecular Sieves reduced the concentration of hydrochloric acid in the solution of Refrigerant-11 liquid from an initial concentration of 1140 p.p.m. to 0 p.p.m. By a material balance, the capacity of Molecular Sieves for hydrochloric acid was calculated to be 2.5 weight per cent.

In a footnote to the results on this part of the test, it was stated:

"Molecular Sieves are slightly alkaline, and can be dissolved by strong mineral acids. But no degrading effect by ordinary acid concentration levels has been observed in customers' field

tests over an 18-month period.

"It is generally understood in the refrigeration trade that it is a poor practice to rely solely upon driers for acid control. Very high acid concentration is evidence of a defective system, and desiccants are not expected to solve such problems. The best policy is to use a good desiccant for reducing water concentration, thereby minimizing formation of acid components."

In a series of tests of the desiccant using 1/4-hp. refrigeration systems, the following results were observed:

There was no pressure buildup across the driers.

Compressor bearing surfaces showed no unusual wear.

### NO BAD EFFECTS

No adverse effects were caused by the presence of Molecular Sieves particles in refrigerant lines, as determined in the accelerated tests where three units were operated without filters in the driers. It was thought that the Molecular Sieves attrition particles were so fine (approximately 0.2 micron) that clogging of capillaries could not occur, and that attrition loss would be extremely low if conventional driers employing filters were installed.

In tests with two automobile air conditioners, with one using Molecular Sieves and the other a silica-type desiccant, comparison of the dimensions showed that neither compressor had worn more than the other.

The report stated that a Molecular Sieve drier placed in the refrigeration system of a low temperature dewpoint recorded located at Linde's Tonawanda Laboratories solved a freeze-up problem that had prevented the instrument from functioning properly.

The desiccant was placed in the system more than 18 months ago, and since that time has dried Refrigerant-13 effectively, permitting operation at temperatures as low as -100° F., it was stated.



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**Cold-Cel TRUCK PLATES**

## Now Representing...

**Marco Industries, Inc.**—The Joe Southern Wholesalers, Inc., Jackson, Miss., has been appointed distributor in that territory which was formerly covered by Orgill Brothers & Co. The latter firm will continue as Admiral distributor in Memphis, Tenn. and Little Rock, Ark. Southern also will cover seven counties in Mississippi formerly handled by Orgill and 11 counties in Louisiana, formerly serviced by Brown-Roberts Hardware & Supply Co. Admiral distributor in Alexandria, La. Orgill Brothers Arkansas Co., will take over the adjoining Fort Smith, Ark. territory which also includes several southwestern Oklahoma counties. A branch of Orgill Brothers & Co., the firm plans to establish office, warehouse, and service facilities in Fort Smith.

**Tork Time Controls, Inc.**—This company has closed its Chicago office and designated a new service station—Midwest Electrical Appliance Service Center, 907 South Western Ave.

**Buensod-Stacey, Inc.**—New appointments of sales representatives include Bratton Sales Engineers, Mobile, Ala.; I. M. Golan Co., Dallas; Mead & Associates, Portland Ore.; D. C. Murphy Co., Davenport, Iowa; Paller Engineering Co., Fort Wayne, Ind.; and R. F. Zimmerman & Co., Shreveport, La.

**Norge Div., Borg-Warner Corp.**—George H. Lehleitner & Co., Inc., New Orleans, has been appointed distributor of Norge gas and electric home appliances throughout Louisiana and several counties in adjoining states. The firm has branch operations at Shreveport, La., and Jackson, Miss. In addition, Norge has consolidated six counties in Connecticut under the distributorship of the Plymouth Electric Co., New Haven. Three of the counties, Litchfield, Hartford, and Tolland, previously were covered by the former Norge Hartford distributor. Plymouth has wholesaled Norge home appliances since February, 1955 in the counties of Fairfield, New Haven, and Middlesex.

**Whirlpool-Seeger Corp.**—Radio & Appliance Distributor, Inc., East Hartford, Conn., has been appointed full-line distributor for "RCA Whirlpool" and "Estate" home appliances. The company replaces Roskin Distributors, Inc. as distributor of home laundry equipment and continues as distributor of other RCA Whirlpool and Estate appliance lines.

**Amana Refrigeration, Inc.**—Frank H. Stiening Co., Pittsburgh, has been named distributor for Amana products in 15 western Pennsylvania counties.

**Admiral Corp.**—Southern New England Distributing Corp., Hartford, Conn., has been named distributor for Admiral products in a newly-created territory covering western Massachusetts and northwestern Connecticut. J. A. Freeman is the Admiral regional sales manager covering the territory.

**Government Contracts**

### SYNOPSIS OF PROPOSED PROCUREMENT

**NAVY**  
District Public Works Office, Sixth Naval District, Naval Base, Charleston, S. C.  
AIR CONDITIONING PORTIONS OF BLDGS. 101 and 411, Marine Corps Air Station, Miami, Fla.—Job—IFB 8657/56—Bid Opening 5 Feb 57.

**AIR FORCE**  
Base Procurement, FTKLC, Edwards Air Force Base, Calif.  
REFRIGERATOR-MECHANICAL HOUSEHOLD STEEL outside shell white enamel 8 cu. ft. 115 V 60 CYC single phase—221 ea.—IFB 04-611-57-289—Bid Opening 14 Feb 57.

Base Procurement Office, Commander, 328th Ftr. Group, Grandview Air Force Base, Mo.  
AIR CONDITIONING OF BASE OPERATIONS, Bldg. 901, Grandview Air Force Base, Mo.—Job—IFB 23-608-57-27B—Bid Opening 1 Feb 57.

Purchasing & Contracting Office, O'Hare International Airport, Ill.  
4AAA-145025, DRINKING WATER COOLERS, approximately 9 gallons per hour draw-off, air cooled condenser, electrical operated, A. C. Current 115V 60 Cyc—14 ea.—Job—IFB 11-603-57-19—Bid Opening 8 Feb 57.

Purchasing & Contracting Office, Otis Air Force Base, Mass.  
Furnish and install REFRIGERATOR ELECTRIC, Domestic—367 ea.—IFB 19-603-57-84B—Bid Opening 4 Mar 57.

Purchase Branch, Wright Air Development Center, Wright-Patterson Air Force Base, Ohio.  
HIGH VELOCITY HEATED AIR SYSTEM, 5000 CFM capacity, in accordance with Exhibit "A"—Job—IFB 33-616-57-35-B—Bid Opening 11-Feb 57.

**GENERAL SERVICES ADMINISTRATION**  
General Services Administration, Region 7, Business Service Center, 1114 Commerce, Dallas, Texas.  
HEATING ALTERATIONS, Post Office and Court House, Del Rio, Texas—Job—IFB CR 72-134-B—Bid Opening 2-5-57.

Miller, Ashley, Chicot, Columbia, Union, and Lafayette counties in Arkansas to its 26 counties in north central and northern Louisiana. Interstate Distributors, Inc. will cover territory consisting of 34 counties in eastern Kansas and 59 counties in western Missouri for Gibson. Emmons-Hawkins Hardware Co. has been appointed distributor in the Huntington, W. Va. area covering Cabell and Wayne counties in West Virginia, Boyd, Greenup, and Carter counties in Kentucky, and Lawrence, Jackson, Meigs, and Gallia counties in Ohio.

**Baltimore Aircell Co., Inc.**—James F. Hayes has been named exclusive representative in the Philadelphia area, including eastern Pennsylvania and southern and western New Jersey. He recently was in sales with the Trane Co.

**Sunroc Corp.**—Appointment of Amstan Supply, division of American Standard, as exclusive plumbing wholesaler of Sunroc water coolers in the greater Chicago area was announced. Amstan Supply and Sunroc Midwestern Corp., one of Sunroc's direct sales and service divisions, will co-distribute the complete line. In addition, both will handle sales of the new "Filter-Pak," an inexpensive filter-purifier.

**Typhoon Air Conditioning Co., Div. of Hupp Corp.**—Acar Supply Co. of Philadelphia and United Supply & Distributor Co., Baltimore, have been named wholesale distributors in their respective areas by Typhoon. Acar will supply dealers in eastern Pennsylvania, southern New Jersey, and Delaware. United will be wholesale representative in Maryland.

## WHAT.. WHEN .. WHERE

### — A Guide to Coming Events of Interest

**American Society of Heating & Air Conditioning Engineers, Inc. (ASH&AE) Annual Meeting**  
Feb. 25-March 1, Chicago

**International Heating & Air Conditioning Exposition**  
Feb. 25-March 1, International Amphitheater, Chicago

**National Electrical Mfrs. Association (NEMA) Meeting**  
March 11-14, Edgewater Beach hotel, Chicago.

**Refrigeration Service Engineers Society (RSES)**  
Educational Forum  
April 5-7, Sheraton-Palace hotel, San Francisco.

**Gas Appliance Mfrs. Association (GAMA) Annual Meeting**  
April 8-10, The Greenbrier, White Sulphur Springs, W. Va.

**National Warm Air Heating & Air Conditioning Association (NWAHACA) Committee Meetings, Technical Conference**  
April 29-May 2, Hotel Cleveland, Cleveland.

**Air-Conditioning & Refrigeration Institute (ARI)**  
Board Meeting and Annual Meeting  
May 5-8, The Homestead, Hot Springs, Va.

**National Restaurant Association (NRA)**  
Convention and Exposition  
May 6-10, Navy Pier, Chicago.

**Mechanical Contractors Association of America (MCAA)**  
Annual Meeting  
May 7-10, Hotel Fontainebleau, Miami Beach, Fla.

**American Society of Refrigerating Engineers (ASRE)**  
Annual Meeting  
June 2-5, Hotel Fontainebleau, Miami Beach, Fla.

**National Warm Air Heating & Air Conditioning Association (NWAHACA) Summer Convention**  
June 5-7, Fairmont hotel, San Francisco.

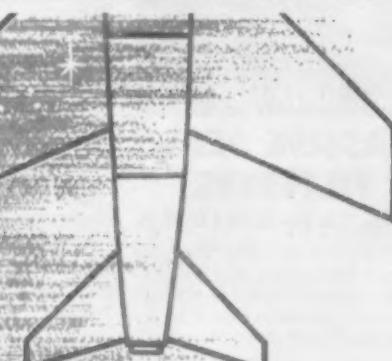
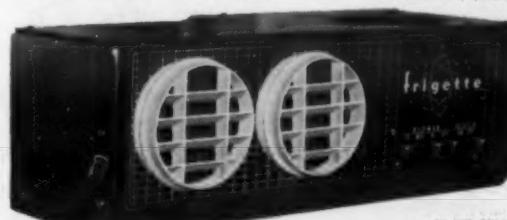
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## NEMA Reports Sept. Refrigerator Sales 262,359; Freezer Sales 51,978

NEW YORK CITY—September sales of household refrigerators by 13 manufacturers reporting to the National Electrical Manufacturers Association were down 16% from the same month of 1955, a NEMA report shows.

Eighteen manufacturers of home freezers reported sales down 29% from September, 1955.

Refrigerator sales for the month totaled 262,359, bringing the total for the first nine months of 1956 to 2,861,460. This was 11% below the 3,210,337 sold in the same period of 1955.

September freezer sales numbered 51,978 units, while nine months sales reached 522,326, off 10% from 1955. Freezer sales for the nine months were off only 8% in the United States but were down 48% to Canada and 27% to other foreign countries. September sales were up 21% to other foreign countries, but were down 55% to Canada and down 29% within the United States.

September refrigerator sales were 16% behind last year in

the United States, off 55% to Canada, and 3% to other foreign countries. For the nine months, sales within the United States were 13% below last year. To Canada, they were down 1% and to other foreign countries they were up 12%.

### NEMA Freezer Sales By Distributors By States

#### SALES OF COMPLETE ELECTRIC FARM AND HOME FREEZERS BY DISTRIBUTORS TO DEALERS BY STATES

Summary for First Nine Months, 1956 Reports were received from 13 companies

STATES	UNITS
Alabama	39,279
Arizona	15,184
Arkansas	23,370
California	232,392
Colorado	21,699
Connecticut	33,521
Delaware	4,952
District of Columbia	28,723
Florida	85,045
Georgia	55,714
Idaho	6,527
Illinois	139,985
Indiana	79,531
Iowa	26,497
Kansas	25,349
Kentucky	35,969
Louisiana	43,622
Maine	10,144
Maryland	35,061
Massachusetts	65,300
Michigan	123,997
Minnesota	38,207
Mississippi	21,731
Missouri	58,534
Montana	6,542
Nebraska	16,265
District of Columbia	4,539
Florida	12,200
Georgia	16,862
Idaho	2,640
Illinois	22,712
Indiana	15,956
Iowa	8,512
Kansas	5,511
Kentucky	8,835
Louisiana	13,155
Maine	1,689
Maryland	5,464
Massachusetts	3,484
Michigan	14,457
Minnesota	10,758
Mississippi	9,688
Missouri	14,716
Montana	2,174
Nebraska	4,121
Nevada	591
New Hampshire	391
New Jersey	11,695
New Mexico	3,087
New York	11,881
North Carolina	17,351
North Dakota	2,774
Ohio	21,691
Oklahoma	5,109
Oregon	5,909
Pennsylvania	19,508
Rhode Island	313
South Carolina	7,237
South Dakota	1,945
Tennessee	15,742
Texas	28,897
Utah	1,713
Vermont	678
Virginia	9,824
Washington	10,812
West Virginia	4,772
Wisconsin	8,940
Wyoming	740
Total United States	423,112

Participating companies: Admiral Corp.; Crosley & Bendix Home Appl. Div.; Avco Mfg. Corp.; Frigidaire Div.; General Motors Corp.; General Electric Co.; Gibson Refrigerator Co. (Out 1-1-56—Out 4-1-56); Hotpoint Co., Div. of General Electric Co.; Kelvinator Div., American Motors Corp.; Maytag Co.; Norge Div., Borg-Warner Corp.; Philco Corp., Appliance Div.; Servel, Inc.; Westinghouse Electric Corp.; Whirlpool-Seeger Corp. (In 3-1-56).

### Judge Orders Jury Trial In Breach of Contract Suit

CHARLOTTE, N. C.—Federal Judge Wilson S. Warlick recently ordered a jury trial in the \$225,000 suit of Fred A. Barnette Distributors, Inc. here against Coolerator Co., International Telephone & Telegraph Co., and others, it has been reported.

Plaintiff charges unlawful termination of a franchise executed in January, 1954 for the Coolerator line, which was acquired by McGraw Electric Co. (now McGraw-Edison Co.).

In Minneapolis, Lester and Roger S. Erickson, trading as Flo-Kold Refrigerator & Equipment Co., filed suit against Avco Distributing Corp. (division of Crosley-Bendix) charging breach of a distributorship contract, the report further stated.

Flo-Kold stated it purchased "many thousands of dollars" of Avco's merchandise and incurred various other expenses in performing its obligations under the agreement.

It charges that last August, Avco terminated the agreement unilaterally.

Flo-Kold asks \$50,000 damages and also that Avco pay all profits the firm would have realized as a distributor under the agreement, which the suit says, was to run for a period of not less than a year from May 22, 1956.

### NEMA 9-Month Refrigerator Sales Hit 2,861,460

Complete Electric Household Refrigerators Only—Sales by Sizes—Units

#### SEPTEMBER (13 Companies)

Sizes	Domestic	Canadian	Foreign	Total
1. 3 cu. ft. (3.4 & under)...	1,724	...	7	1,731
2. 4 cu. ft. (3.5 to 4.4)...	...	...	...	...
3. 5 cu. ft. (4.5 to 5.4)...	...	...	...	150
4. 6 cu. ft. (5.5 to 6.4)...	150	...	...	...
5. 7 cu. ft. (6.5 to 7.4)...	6,475	261	1,274	8,010
6. 8 cu. ft. (7.5 to 8.4)...	46,327	764	8,593	55,684
7. 9 cu. ft. (8.5 to 9.4)...	5,484	97	453	6,034
8. 10 cu. ft. (9.5 to 10.4)...	35,296	259	1,098	36,653
9. 11 cu. ft. (10.5 to 11.4)...	55,472	1,650	2,026	59,148
10. 12 cu. ft. (11.5 to 12.4)...	68,282	290	1,521	70,093
11. 13 cu. ft. (12.5 to 13.4)...	14,300	23	196	14,519
12. 14 cu. ft. (13.5 & over)...	10,071	143	123	10,337
13. Total .....	243,581	3,487	15,291	262,359

Refrigerators Having Two Exterior Doors (All Sizes Included In Above) .....		63,196	291	1,184	64,671

#### FIRST NINE MONTHS (13-12 Companies)

Sizes	Domestic	Canadian	Foreign	Total
1. 3 cu. ft. (3.4 & under)...	...	10	203	13,345
2. 4 cu. ft. (3.5 to 4.4)...	13,132	...	35	35
3. 5 cu. ft. (4.5 to 5.4)...	35	...	...	5,618
4. 6 cu. ft. (5.5 to 6.4)...	5,489	96	33	66,912
5. 7 cu. ft. (6.5 to 7.4)...	53,086	5,520	8,306	530,223
6. 8 cu. ft. (7.5 to 8.4)...	426,060	6,621	97,542	544,964
7. 9 cu. ft. (8.5 to 9.4)...	116,202	9,175	19,816	145,193
8. 10 cu. ft. (9.5 to 10.4)...	496,638	15,104	33,222	550,842
9. 11 cu. ft. (10.5 to 11.4)...	513,692	12,150	25,000	565,920
10. 12 cu. ft. (11.5 to 12.4)...	638,676	4,730	17,016	660,422
11. 13 cu. ft. (12.5 to 13.4)...	147,908	1,171	3,887	152,966
12. 14 cu. ft. (13.5 & over)...	182,954	2,515	5,471	190,940
13. Total .....	2,593,872	57,092	210,496	2,861,460

Participating companies: Admiral Corp.; Crosley & Bendix Home Appliances Div.; Avco Mfg. Corp.; Frigidaire Div.; General Motors Corp.; General Electric Co.; Gibson Refrigerator Co.; Hotpoint Co., a Div. of General Electric Co.; Kelvinator Div., American Motors Corp.; Maytag Co., The (in 4-1-56); Norge Div., Borg-Warner Corp.; Philco Corp., Appliance Div.; Servel, Inc.; Westinghouse Electric Corp.; Whirlpool-Seeger Corp.

### NEMA 9-Month Freezer Sales Hit 522,326

#### Complete Electric Farm and Home Freezers—Sales by Sizes—Units

Farm and home freezers complete with high and low side and cabinet, where 50% or more of the net cabinet capacity is designed for the freezing and/or storage of frozen foods.

#### SEPTEMBER

Sizes	Domestic	Canadian	Foreign	Total
1. 6 cu. ft. (6.4 & under)	*	*	*	*
Chest Models .....	*	*	*	*
Upright Models .....	*	*	*	*
2. 7 and 8 cu. ft. (6.5 to 8.4)	*	*	*	*
Chest Models .....	*1,747	*15	*27	*1,789
Upright Models .....	*153	*8	*	*161
3. 9 and 10 cu. ft. (8.5 to 10.4)	*	*	*	*
Chest Models .....	1,368	57	17	1,442
Upright Models .....	*	*	*	*
4. 11 and 12 cu. ft. (10.5 to 12.4)	*	*	*	*
Chest Models .....	*	*	*	*
Upright Models .....	*	*	*	*
5. 13 and 14 cu. ft. (12.5 to 14.4)	*	*	*	*
Chest Models .....	*5,443	*2	*180	*5,625
Upright Models .....	*2,021	*24	*126	*2,351
6. 15 cu. ft. (14.5 to 15.4)	*	*	*	*
Chest Models .....	10,607	169	274	11,050
Upright Models .....	*	*	*	*
7. 16 and 17 cu. ft. (15.5 to 17.4)	*	*	*	*
Chest Models .....	5,438	7	45	5,445
Upright Models .....	*2,631	*4	*2	*2,635
8. 18 and 19 cu. ft. (17.5 to 19.4)	*	*	*	*
Chest Models .....	2,074	11	45	2,130
Upright Models .....	7,945	20	98	8,063
9. 20 and 21 cu. ft. (19.5 to 21.4)	*	*	*	*
Chest Models .....	3,115	98	19	3,232
Upright Models .....	*	*	*	*
10. 22 cu. ft. (21.				

## 'Tricks' for Better Cooling--

(Concluded from Page 1, Col. 4)

ly with Prof. Watt. They both asserted that the biggest advantage of attic ventilating fans came after the sun went down. Then, they said, the fans remove the accumulated heat in the attic and wipe heat from the insulation.

Prof. Watt told Horton that he would agree with the latter statement if the insulation was thick enough to level with the top of the joists; but not otherwise.

He suggested that possibly more research should be done on this subject.

### 'Pitched Roof Best'

Prof. Watt, who spoke at a session on air conditioning during the annual convention of the National Association of Home Builders, got onto this subject in recommending a pitched roof for the air conditioned home rather than a shed or flat roof.

He pointed out that the more air in the attic space, the less heat will come through into the house. Doubling the amount of air in the attic will cut down the heat absorbed by three-fourths, he said.

He suggested that the builder use the lightest color roofing he could and the lightest color gravel to reflect as much sun heat as possible.

Then he suggested that the builder concentrate his insulation in the ceiling rather than the walls.

### Says Batt Is Best

#### Insulation

Declaring that batt insulation was best, he recommended at least 4 in. of mineral wool with reflective foil on top.

While admitting that reflective insulation by itself is good, he contended that workmen crawling around the attic would tear it.

"Every dollar's worth of insulation you use will cut an equivalent amount off the cost of the air conditioning equipment," he asserted. "A well insulated house will save about \$80 on equipment costs."

Prof. Watt declared that the cheapest place to put the duct-work is in a furred-down central hallway. Heating and cooling

losses are the least there, he pointed out, in that the duct losses would be to the conditioned space.

Next best place is in the floor slabs. This saves "messing around" with insulation and gives some radiant cooling effect, he said. Radiant cooling amounted to about 20% of total cooling in homes with ducts in the floor slabs.

### Ceiling Diffusers 'Best for Cooling'

Ceiling diffusers do the best job for cooling, but not for heating. Perimeter floor registers do the best job for both, he noted.

High inside wall registers do a good job of cooling, he observed, but every draft detected at the Village came from high wall registers. Low wall registers did not do as good a job as the others.

Return air grille location is not critical for cooling but it is for heating. Therefore, he advised, put the return air grilles where you would for heating. At the Village, this caused no trouble on the cooling cycle, he stated.

The best place for the filter is behind the return air grille rather than at the equipment, Prof. Watt suggested. It should be where the people can see it and tell when it gets clogged. If it is up in the attic or hidden in the equipment, it won't get changed. As cooling seems to dirty filters faster than heating, he advised 1½ sq. ft. of filter for every ton of refrigeration.

To cut down on the heat load, he urged that the hot water heater be installed outside the conditioned space. He recommended electric rather than gas ranges as the former add much less moisture to the house. A hood and exhaust fan should be located over the range.

He did not see any need to specially ventilate the bathroom as use is too sporadic to add any significant load to the house.

### Likes Split System

He recommended the split system of air conditioning with the condensing unit outdoors as "the best bet."

The discussion on air conditioning was chairwoman by John R. Worthman of NAHB's Research Institute. Other speakers were Ed Ford, manager of national accounts for Bell & Gossett Co., and Ralph Crane of the du Pont Co.

Ford described the advantages of wet heating and cooling. He warned the builders that in their new interest in air conditioning not to "compromise a good heating system for cooling. Home buyers demand year-round comfort, not just cooling."

Perfect heating and cooling, he said, is the utter absence of feeling heat or cold.

Only water, he declared, offers comfort heating, zone control, hot faucet water, snow melting, and summer cooling all in one system.

Crane outlined some of the results of du Pont's recent survey on central air conditioning. These were previously reported in the issue of AIR CONDITIONING & REFRIGERATION NEWS.

## Frigidaire Claim--

(Concluded from Page 1, Col. 4) aire Div., General Motors Corp. However, this ruling can be appealed to the Supreme Court.

A majority of the Claims Court held that a company should not have to pay excise taxes on the money it collects for the relatively rare so-called extra-cost "special protection" warranties—those over a manufacturer's basic guarantee that his products are in good working condition and free from defective parts.

### No Refund Under Basic Guarantee

The court majority ruled, however, that in the much more common situation a company cannot get any tax refund for its expenses in servicing its products under the basic sales guarantee that the products are in good working order.

In the two earlier decisions, the court had ruled that a company could get a tax refund on anything it spends providing parts and services under any warranty. This was interpreted as permitting a refund for work done under any warranty, extra-cost or not.

Unless it's overturned on appeal, this latest ruling means Frigidaire will be able to collect a refund only on the taxes paid on its extra-cost warranties. The firm had sued for a \$3,143,000 refund based on all its warranty expenses for 1945-51.

Frigidaire was awarded \$240,000 in refunds by the first case, covering 1937-41, and stands to get \$130,000 as a result of the second decision, covering 1942-44. However, the government said it may try to reduce this second award in the light of the court's latest ruling.

### Many Cases Pending

Many warranty cases are pending in the Court of Claims. They involve refunds of more than \$100 million. Most of the claims were filed by producers of such products as home appliances and TV sets, which normally carry fixed warranties. According to a Government attorney, most of these claims would be rejected under the reasoning set forth in the latest Frigidaire ruling.

Under Frigidaire's plan, the company at no extra charge guaranteed its refrigerators against defective operation for one year. Then, for an additional \$5, the purchaser extended the warranty period for an extra five years. Each buyer was required to take the extra-cost warranty.

The Justice Department said it now feels the Claims Court's latest ruling eliminates any need for corrective legislation. The agency had asked Congress for legislation to reverse the earlier Frigidaire decisions.

### Hajoca Opens Branch

CHARLOTTE, N. C.—Hajoca Corp., air conditioning, refrigeration, plumbing, heating, and industrial materials wholesaler, with general offices in Philadelphia, has held formal opening of its new branch building in Charlotte. The new branch, which is located at 3000 S. Tryon, is managed by J. L. Berry.



## Betz Realigns Sales Staff--

(Concluded from Page 1, Col. 2)

Russell E. Keller has been appointed sales manager of industrial air conditioning. As such, Keller will direct activity in a new phase of Bohn operation—a complete new line of self-contained air conditioning equipment for industrial installation.

Keller has had 26 years' experience in the air conditioning and refrigeration field. He joined the Bohn organization in December of last year.

Robert W. Carvell has been recalled from the field and appointed sales manager of commercial sales. He will cover all plained.

wholesale activities and supervise advertising and sales promotion. He has had 10 years' sales experience in the industry. He joined Bohn in June of last year.

Three additional appointments were announced: Charles B. Simison was appointed application engineer, Donald J. Jessup was appointed to order service and sales responsibilities, and Charles E. McAdoo was named advertising manager of the division. McAdoo formerly was a methods and equipment specialist, it was ex-

plained.

## B-W Consolidates Hydraline In York--

(Concluded from Page 1, Col. 5) marily the plumbing and heating trade.

"Hydraline and its methods of distribution will complement our operations," said R. K. Serfass, vice president and general manager of York's industrial division. "At the same time the inclusion of some of York's developments will give Hydraline

customers a better and broader line.

C. S. Davis, Jr., general manager of Hydraline, said the new line of products has been designed for commercial as well as residential structures.

A sales program for the expanded operation will be discussed at a meeting in York early in February.

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For more information about products advertised on this page use Information Center, page 20.

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RATES for all other classifications \$10.00 per insertion. Limit 50 words. 20¢ per word over 50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other address by actual word count. Please send payment with order.

### POSITIONS WANTED

**REFRIGERATION ENGINEER** with twenty years' experience in developing various types of refrigeration equipment. Expert in designing and developing automatic ice machines. Five years conducting sales and service schools thru-out the United States. Desires position with manufacturer or large distributor. Can take responsibility. Will be an asset to any organization. BOX A5728, Air Conditioning & Refrigeration News.

**TOP SALES** executive available. 10 years' sales and engineering experience national manufacturer heating, ventilating, air conditioning and heat transfer products. Outstanding sales record to distributors, dealers, contractors and industrials. Presently managing wholesale heating, air conditioning and air cleaning organization. Will relocate. BOX A5728, Air Conditioning & Refrigeration News.

**REFRIGERATION SERVICE** engineer 36 years old, 13 years' experience, nine years in the field servicing and installing air conditioners and commercial refrigeration systems. Full information on request. Desire to relocate in milder climate. BOX A5729, Air Conditioning & Refrigeration News.

### POSITIONS AVAILABLE

**BLAST FREEZE** Corporation needs men capable of assisting independent food stores in merchandising on premise frozen red meats under an exclusive Blast Freeze franchise. Give complete information by letter to ROBERT B. AYRES, President, 10 Main Street, Park Ridge, Illinois.

**MANUFACTURERS' REPRESENTATIVES:** Territories available for experienced commercial refrigeration salesman to represent manufacturer of complete line of all temperature ranges in packaged machines. Write, giving personal details and background to: J. R. BEAN, Sales Manager, 2524 Brooklyn Road, Jackson, Michigan.

**TERRITORIES AVAILABLE** for experienced salesmen of air conditioning and heating equipment. Write W. B. LONGSHORE, Box 60, Gadsden, Alabama.

**EXCELLENT OPPORTUNITY** for experienced air conditioning and commercial refrigeration salesman. PINSKI BROS., INC., 1020 Central Ave., Great Falls, Montana.

**REFRIGERATION FIELD** servicemen: experience preferred, but not essential on environmental test equipment for leading manufacturer. Company benefits, replies confidential. Please contact TENNEY ENGINEERING, INC., 1090 Springfield Road, Union, New Jersey.

**MAN, THOROUGHLY** familiar with refrigeration and air conditioning equipment and supplies, to become counter-man for wholesaler of refrigeration supplies. Counter experience preferable but not essential. Permanent, good opportunity. P.O. BOX 63, Long Island City 3, N.Y.

### MANUFACTURERS' REPRESENTATIVES

**ATTENTION SERVICEMEN:** Send for free circulars and bulletins on refrigeration parts and equipment. Real money saving values: WALTER W. STARR; 2833 Lincoln Avenue, Chicago 13, Illinois.

**TEN YEARS** in Texas traveling four states representing manufacturers in the air conditioning and refrigeration industry, we know the trade intimately. Policy changes have resulted in an opening so we can now offer aggressive and intelligent representation for an important line in this territory. Reply in confidence to POST OFFICE BOX 476, Richmond, Virginia.

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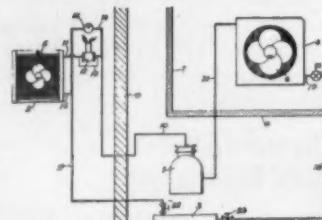
## MANUFACTURERS' REPRESENTATIVES

See ad of special importance  
to you on Page 19.

## PATENTS

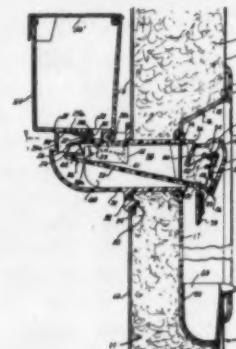
### Week of September 4

**2,761,287. MEANS FOR CONTROLLING HIGH SIDE PRESSURE IN REFRIGERATING SYSTEMS.** Hyman Malkoff, Levittown, Pa., and Otto J. Hirschbaum, Trenton, N.J., assignors to Kramer Trenton Co., Trenton, N.J., a corporation of New Jersey. Application June 25, 1953, Serial No. 364,042. 4 Claims. (Cl. 62—3.)



1. In a refrigerating system including interconnected compressor, condenser, evaporator, and a pressure reducing device positioned in operative relationship to the evaporator inlet, means for automatically preventing the pressure in the high side of the system adjacent the said pressure reducing device from falling below a predetermined minimum, regardless of ambient temperature at the condenser or heat load in the evaporator, by controlling the level of the liquid refrigerant in the condenser, said means comprising, a hot gas conduit connecting the compressor discharge with the condenser inlet, a branch conduit connecting the hot gas conduit with the condenser outlet, automatic constant outlet pressure flow controlling means in the branch conduit operatively subject to pressure in said conduit between said controlling means and the condenser outlet for establishing temporary pressure conditions at the outlet to restrain outflow of condensed refrigerant whenever condenser pressure drops below a predetermined minimum degree, together with means at the condenser inlet for restricting flow thereto to establish a predetermined pressure drop for cooperating with the flow controlling means in the branch conduit in establishing the above named temporary pressure conditions at the condenser outlet.

**2,761,288. LIQUID DISPENSER FOR REFRIGERATOR CABINETS.** Florence B. Anderson, Winnetka, and Joseph H. Konofe, Libertyville, Ill., assignors, by means assignments, to Amana Refrigeration, Inc., Amana, Iowa, a corporation of Iowa. Application Aug. 16, 1954, Serial No. 450,072. 28 Claims. (Cl. 62—33.)



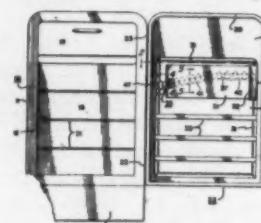
1. In a refrigerator cabinet having a wall provided with an opening therethrough, a source of liquid supported within the cabinet and having an outlet opening for the liquid, a first valve member for normally closing the outlet opening, a spout extending through the opening in said wall and supported for sliding movement inwardly and outwardly with respect to said wall, the inner end of the spout registering with the liquid outlet opening to receive liquid from said source, the portion of the spout at the outer side of the wall having a discharge opening, a second valve member normally closing the discharge opening, and means responsive to sliding movement of the spout in an inward direction to successively open the first and second valve members.

### CLOSE-OUT BRAND NEW COMPRESSORS COMPRESSOR UNITS

Because of discontinuing production of Universal Refrigerators, Freezers, Air Conditioners and Beverage Coolers, we have a large stock of Brand New Compressors and Units which we are closing out at very low prices. List sent on request.

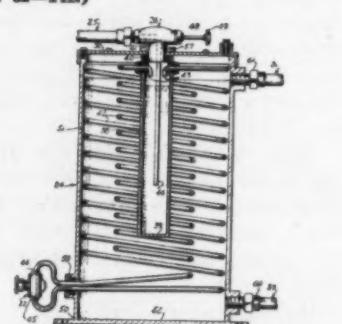
UNIVERSAL DIVISION  
THE HORTON COMPANY  
915 LIBERTY AVE., PITTSBURGH 22, PA.

**2,761,289. REFRIGERATING APPARATUS HAVING SHELF IN DOOR COMPARTMENT.** Orson V. Saunders, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application Oct. 26, 1953, Serial No. 368,340. 13 Claims. (Cl. 62—33.)



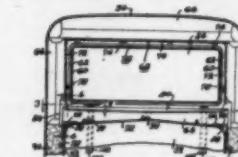
the rear of the trunk to provide a construction adapted for the insertion and withdrawal of said filter between said ridges.

**2,761,293. AIR CONDITIONING SYSTEM FOR AUTOMOBILES.** Joseph M. Bubank, San Angelo, Tex. Application Oct. 2, 1953, Serial No. 363,774. 1 Claim. (Cl. 62—141.)



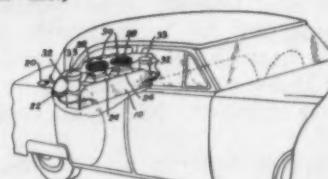
A heat exchange device for water cooling apparatus including a closed refrigerant circuit and a closed water circuit, comprising: a cylindrical water jacket having an inlet and an outlet at its opposite ends for connecting the jacket in the second circuit; a cylindrical accumulator extending axially of and within the jacket from one end of the jacket, the accumulator having at said one end of the jacket a single outlet into the first circuit; a tube extending axially of and within the accumulator and having an inlet communicating with the interior of the accumulator adjacent the other end of the coils.

**2,761,290. REFRIGERATOR INSULATION DRYING ARRANGEMENT.** Lawrence A. Philipp, Detroit, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. Application Sept. 9, 1953, Serial No. 378,179. 2 Claims. (Cl. 62—103.)



1. Refrigerating apparatus comprising, a cabinet casing having side walls, a liner within said casing forming a food storage compartment and having side walls spaced from the casing side walls, a refrigerating evaporator compartment, a refrigerant freezing evaporator within said casing externally of said liner, heat insulation between said freezing evaporator and said casing and between said freezing evaporator and said liner, second heat insulation between said liner and casing side walls, opposite side wall means spacing said first insulation from the sides of said freezing evaporator, a drip and air baffle plate beneath said freezing evaporator between said freezing evaporator and the first insulation between the freezing evaporator and said liner, said baffle plate being spaced from the lower edges of said opposite side wall means, upright wall means forming air flow passages establishing communication between the space between said liner and casing and said freezing evaporator for diffusion of vapor, and means on said wall means to direct defrost water onto said baffle extending laterally between the lower edges of said wall means and said plate.

**2,761,291. AIR DUCT FOR AUTOMOBILE COOLING SYSTEM.** Donald E. Golding, Detroit, Mich., assignor to Studebaker-Packard Corp., a corporation of Michigan. Application June 9, 1954, Serial No. 435,528. 3 Claims. (Cl. 62—117.)



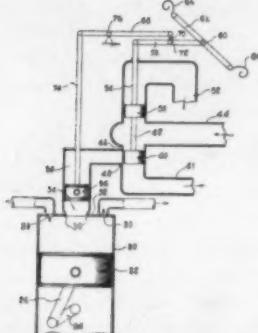
1. An automobile having a trunk opening toward the rear thereof, an air circulating system having a cooling unit disposed in the trunk, said system including an elastic duct means, said duct means having internal shoulder means for holding a self supporting air filter, said internal shoulder means taking the form of spaced apart raised ridges positioned generally transversely to direction of flow in said duct, and said duct being split at its rear axially from one end along two spaced lines at least to said ridges to form a flap out of a portion of one wall of said duct so that said flap may be peeled back by reaching through

(Continued on next page)

## PATENTS

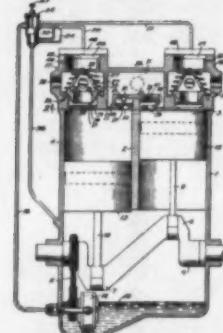
(Continued from preceding page)  
movements of said ball axially at all times toward and away from said seat, said guide means having clear passages around said ball when it is off said seat.

**2,761,615. VARIABLE CAPACITY COMPRESSOR.** David C. Prince, Schenectady, N. Y.



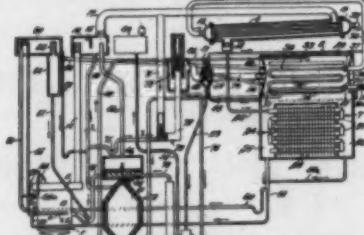
1. A fluid compressor having a variable capacity, comprising a cylinder, piston reciprocable in the cylinder, a plenum chamber communicating with the cylinder at the working end of the piston, an auxiliary piston forming at one end a movable wall of the plenum chamber, the auxiliary piston being slidably in the chamber to vary the effective volume thereof and thus the capacity of the compressor, a control chamber at the opposite end of the auxiliary piston, a source of liquid under pressure and a liquid discharge line, both independent of the chambers at opposite ends of the auxiliary piston, a control valve for alternately connecting the control chamber to said source and discharge line to position the auxiliary piston so as to determine the volumetric capacity of the compressor, a thermostat, a linkage connecting the thermostat to the valve for operating the valve in response to temperature changes, and a follow-up connection between the linkage and the auxiliary piston.

**2,761,616. COMPRESSOR UNLOADING APPARATUS.** Alwin B. Newton, Wichita, Kans., assignor to The Coleman Co., Inc., Wichita, Kans.



1. In a compressor apparatus having a compression chamber, a tubular valve casing having a flow passage therethrough, said casing also having a ledge on the inner surface thereof, a movable valve cage within said casing having the general configuration of a perforate hollow cone provided with a tubular portion extending from the base thereof and having a passage for the flow of fluid therethrough, said cage having a peripheral ridge defined by the base of said cone for the seating of said valve cage against said ledge, said movable cage also being provided with a movable valve seat adjacent the lower end of said tubular portion, and a movable valve member mounted for movement between seated and unseated position against the movable valve seat provided by said movable cage, whereby the flow of fluid through said casing from said compression chamber is prevented only when said cage is seated against the annular ledge and said movable valve member is seated against the movable valve seat provided by said cage.

**2,761,656. AIR CONDITIONING.** Robert K. Spear, Evansville, Ind., assignor to Servel, Inc., New York, N. Y.



1. A liquid-lift device comprising means forming a source of liquid to be lifted, a vapor liquid-lift, a feed line connected at one end to said source of liquid and at its opposite end to a lower portion of said vapor lift and a receptacle connected to an upper portion of said vapor lift to receive liquid therefrom, said source of liquid being located above the lower portion of said

vapor lift to provide a reaction head between the lower portion of the vapor lift and the source of liquid, said feed line including a first and a second conduit connected to the source of liquid in a manner that liquid flow from the source of liquid into the feed line must exceed the capacity of said first conduit before liquid flows into said second conduit, said vapor lift including a first and a second lift tube each provided with a heat transfer section connected to receive liquid from said first and second conduits, respectively, for vaporizing a portion of the liquid therein to lift the remaining liquid therethrough into the receptacle, said heat transfer section of said first lift tube including a dead end portion connected between the feed line and the lower portion of the vapor lift as to be operable responsive to the amount of vapor produced in said heat transfer section for controlling the flow of liquid into said section and thereby automatically control the extent of the heat transfer section.

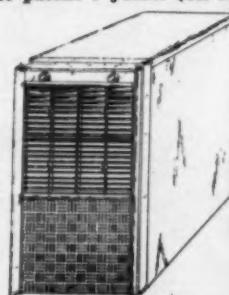
**2,761,751. CABINET FOR HOUSEHOLD REFRIGERATORS, ETC.** Jack Potter Stockton, Spring Lake, N. J.; Louise Haines Stockton, executrix of said Jack Potter Stockton, deceased, assignor to herself.



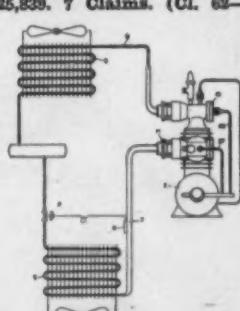
1. A refrigerator cabinet having an opening in one of its faces for access to its interior, a door to close said opening hinged to the cabinet at one side of said opening, shelves for supporting articles in the rear part of said cabinet, which shelves extend only about halfway forward in the cabinet toward the opening, other shelves for supporting articles in the front part of the cabinet, which shelves occupy the front part of the cabinet unoccupied by the rear shelves when the door is closed, some of the shelves in the front part of the cabinet being mounted on the door to swing out of the cabinet to one side as the door is opened and others being movably mounted in the cabinet at the opposite side of the door opening to swing out to the other side, mounting structure for the shelves in the rear part of the cabinet permitting them to be moved forward and back within the cabinet, linkage means interconnecting the door and the rear shelves for automatically moving the rear shelves toward the front of the cabinet as the door is opened, and further linkage means interconnecting rear shelves and the swinging front shelves at the said opposite side of the door opening to swing the latter outwardly to the side when the rear shelves are moved forward.

### DESIGNS

**178,664. AIR CONDITIONING UNIT.** Harlan L. Howe, De Witt, N. Y., assignor to Carrier Corp., Syracuse, N. Y., a corporation of Delaware. Application Dec. 1, 1955, Serial No. 38,127. Term of patent 7 years. (Cl. D62—4.)



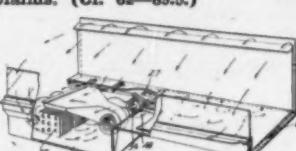
**2,762,904. AUTOMATIC SERVICE VALVES FOR USE IN REFRIGERATION SYSTEMS.** Lars Hanson, Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y., a corporation of Delaware. Application Dec. 13, 1952, Serial No. 325,839. 7 Claims. (Cl. 62—3.)



6. In a refrigeration system the combination of a compressor having a pressure lubrication system, a condenser, an evaporator, expansion means, means operatively connecting the elements of said combination including a suction line connecting the evaporator and the

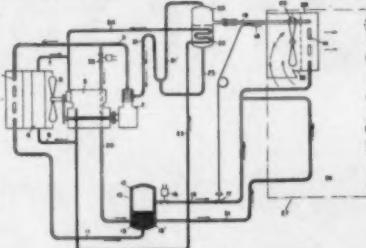
compressor and a discharge line for connecting the condenser and the compressor, means placed in said suction line for regulating the flow of refrigerant therethrough responsive to lubricant pressure of the compressor lubrication system and means placed in said discharge line for regulating the flow of refrigerant therethrough responsive to lubricant pressure of the compressor lubrication system.

**2,762,905. REFRIGERATED SHOW-CASE.** Karl A. Weber, Los Angeles, Calif., assignor to Weber Showcase & Fixture Co., Inc., Los Angeles, Calif., a corporation of California. Application April 29, 1953, Serial No. 351,904. 3 Claims. (Cl. 62—89.5.)



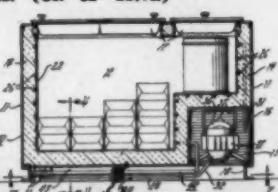
1. A refrigerated showcase comprising: a cabinet, a display bin in said cabinet forming therewith air ducts at the front and rear of said bin, a refrigerating coil disposed in said cabinet between said air ducts, blower means recirculating air over said coil, second blower means bypassing a portion of the air thus recirculated through one of said air ducts and over said display bin.

**2,762,206. DEFROSTING ARRANGEMENTS FOR REFRIGERATION SYSTEMS.** Carlyle M. Ashley, Fayetteville, N. Y., assignor to Carrier Corp., Syracuse, N. Y., a corporation of Delaware. Application Sept. 30, 1952, Serial No. 312,332. 16 Claims. (Cl. 62—117.)



1. In a refrigeration system, the combination of a compressor, a condenser, a heating member serving when the condenser is inactivated to evaporate liquid refrigerant in said member for return to the condenser, expansion means, and an evaporator, placed in a closed circuit in said order, means for evaporating liquid refrigerant in the evaporator during normal operation of the system thereby creating frost on the exterior surfaces of the evaporator, and means for inactivating the condenser by substantially filling the condenser with liquid refrigerant to raise the evaporator pressure and temperature thereby condensing gaseous refrigerant in the evaporator to thaw frost from the evaporator surfaces.

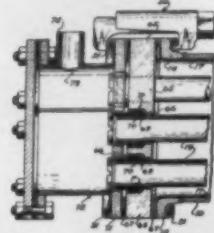
**2,762,207. REFRIGERATING APPARATUS, INCLUDING AN AIR COOLED CONDENSER.** Wilford H. Teeter, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application April 21, 1955, Serial No. 502,789. 5 Claims. (Cl. 62—117.4.)



1. In a refrigerating apparatus, a horizontally elongated cabinet having a plurality of insulated walls dividing the same into a produce storage compartment provided with a top access aperture and a machine compartment at one end thereof, a refrigerating system associated with said cabinet including an evaporator for cooling said storage compartment, a centrifugal switch mounted on said shaft and having a first position controlling said first solenoid and a second position controlling said second solenoid, said switch moving from said first position to said second position at a first predetermined shaft speed limit following gradual speed acceleration of said shaft and returning from said second position to said first speed position at a lower second predetermined shaft limit during gradual speed deceleration of said shaft; and inertia means responsive to sudden deceleration of said shaft during the down-shift of said locking means temporarily to hold said switch in second position until after an acceleration of said shaft following the completion of said downshift.

1. A condenser comprising a first conduit coil section and a second conduit coil section, said first conduit coil section of said condenser being secured to said first portion of said plate and second conduit coil section of said condenser being secured to said inclined second portion of said plate, and means for circulating air into said flue through said inlet opening whereby to establish separate and distinct streams of air in said upper and lower passageways over said plate for cooling said condenser sections and out of said cabinet through said outlet opening in said one wall of said machine compartment.

of the aperture, a tube extending through said aperture in spaced relation to the tube sheet and cooperating with the tube sheet to define an annular



lar chamber, packing in said chamber comprising a deformable annulus surrounding a portion of the tube in said tube sheet and bearing against opposed portions of the tube and tube sheet, a support wall spaced from the tube sheet and opposing the outer side thereof, and a packing gland threadably engaged with said support wall and having an annular end portion projecting into said chamber and pressing the packing into sealing engagement with the tube sheet and tube within said chamber, said annular end portion of the packing gland having an inside diameter approximating the minimum diameter of the tube sheet aperture and being in axial and radial spaced relation to the end of the tube extending through the tube sheet whereby the tube is held in floating spaced and sealed relation to the tube sheet for limited relative axial and radial movement.

**2,762,676. FREEZER COMPARTMENT DOOR.** Evans T. Morton, Galesburg, Ill., assignor to Admiral Corp., Chicago, Ill., a corporation of Delaware. Application Nov. 22, 1950, Serial No. 157,917. 4 Claims. (Cl. 312—323.)

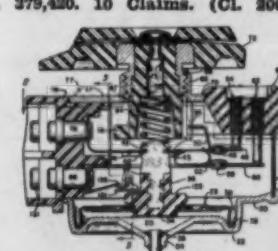


1. In a refrigerator having a freezing compartment, door means for said compartment comprising a door member, a hinge member, said door member hinged to said hinge member, and spring means engaged between said door and hinge members adapted to bias said door to a plurality of positions, comprising a strip having a hook formed at one end embracing a ridge formed at one end of said hinge member, a leg extending from said hook along said hinge member, a bowed part extending at an angle to said leg, a second leg extending from said bowed part through an opening in said hinge member, said door member being formed with an opening having a flat wall defining at least one edge of said opening, said second leg extending into said opening along said flat wall and adapted to slide along said flat wall as said door is opened and closed to cause the pressure line of said spring to move from one side to the other of the hinge line between said door and hinge members.

**2,762,711. THAW INDICATOR.** George W. Zopf, Jr., Dayton, Ohio, assignor to Monsanto Chemical Co., St. Louis, Mo., a corporation of Delaware. Application April 29, 1953, Serial No. 351,839. 18 Claims. (Cl. 99—192.)

1. In combination with a packaged frozen product, a thaw indicator comprising a clay-aromatic amine color body subject to change in color on contact with liquid  $H_2O$  but having its color unaffected by contact with ice and accessible to liquid  $H_2O$  on the occurrence of thawing.

**2,762,838. REFRIGERATING APPARATUS.** James W. Jacobs, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application Sept. 10, 1953, Serial No. 379,420. 10 Claims. (Cl. 200—140.)

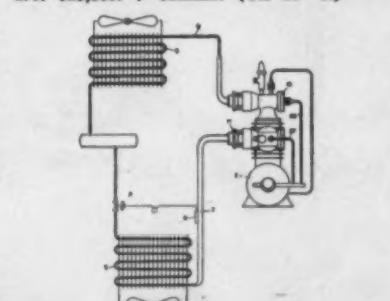


3. A control including first and second cantilever spring blades, a toggle spring extending between the adjacent end portions of the blades, one of said blades being provided with a contact portion, an adjusting means for limiting the one direction of movement of said contact portion, a cooperating contact means for limiting the opposite direction of movement of said contact portion, and a second adjusting means for adjusting the position of said cooperating contact means, and a diaphragm means having a follower provided with a connection with one of said blades, said follower being provided with a projection, and a switch contact means located in the path of said projection beyond the normal range of movement but within the maximum range of movement of said projection.

31

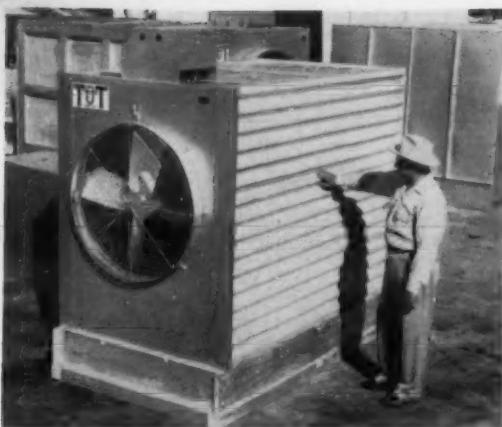
### Week of September 11

**2,762,904. AUTOMATIC SERVICE VALVES FOR USE IN REFRIGERATION SYSTEMS.** Lars Hanson, Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y., a corporation of Delaware. Application Dec. 13, 1952, Serial No. 325,839. 7 Claims. (Cl. 62—3.)



6. In a refrigeration system the combination of a compressor having a pressure lubrication system, a condenser, an evaporator, expansion means, means operatively connecting the elements of said combination including a suction line connecting the evaporator and the

For more information about products advertised on this page use Information Center, page 20.



## TOT Adds Cooling Tower Line--

(Concluded from Page 1, Col. 2)

Three division sales managers, with experience in the tower and air conditioning fields totaling 47 years, will head TOT offices in Philadelphia, Atlanta, and Houston.

They are:

Pat McTeigue of Philadelphia, 19 years, experience, northeast division sales manager;

B. W. Embry of Atlanta, 18 years' experience, southeast division sales manager;

Bill Sullivan of Houston, 10 years' experience, south central division sales manager.

The latest addition to TOT's production is a line of mechanical towers cased in cement asbestos. Kerr said these will be stocked for systems of 15 to 125 tons. Buyers may choose propeller or centrifugal blowers. All mechanical towers are

INSPECTING one of TOT Towers' new line of mechanical cooling towers cased in cement asbestos is Al Salinas, assistant manager in charge of manufacturing.

complete assembled and ready for installation before shipment, Kerr said, and TOT also offers a completely assembled, leak-proof basin of marine plywood for atmospheric towers.

Stocks of TOT towers are maintained in more than 60 warehouses over the country, he indicated.

(Concluded from Page 1, Col. 5)

theater, Stevens declares, and he also says that exhibitors' applications required 15% more space than originally planned.

The Exposition will be open on Monday, Feb. 25, from 2 to 10 p.m., and on Tuesday, Wednesday, and Thursday of that week it will be open from 12 noon to 10 p.m. On Friday, March 1, the Exposition will be open from 12 noon to 6 p.m.

Registration for admittance to the Exposition will be limited to those who have a valid interest in the field. The general public will not be admitted, but anyone having a legitimate interest in the exhibits will be admitted. Provisions will be made for advance registration.

Exhibits will include all types of equipment available for the heating and air conditioning of commercial and industrial estab-

lishments, and of residences. As Celli predicted that the approaching availability of frozen meats will make competitors for them out of every neighborhood store of any kind.

"Add one refrigerated case to your meat lineup now," Celli urged the grocers, "to provide for frozen meat. Some cases come with a dial on which you can adjust the temperature to higher levels for your regular meat display, then turn it down to convert the case for use in displaying frozen meats," he added.

## Frozen Food Cases--

(Concluded from Page 1, Col. 4)

more storage space, and eliminates the waste space needed for the walk-in arrangements.

Celli was one of the featured speakers at a two-day workshop sponsored by the University of Texas and the Texas Retail Grocers Assn. Meetings of the workshop are limited to 50 grocers and are being held at various cities each month.

Grocers listened with interest

as "Freon-22" becomes more available, or the cost comes down, it will be used more widely, Celli predicted. With "Freon-22" lower temperatures are possible, he pointed out.

The trend is toward keeping cases colder; ice cream is now kept at -25 to -35° F., Celli explained to the grocers, and temperatures of 0 to -20° F. are needed for products which have high sugar content.

# NOW for the first time....

**Tecumseh**

**WATER COOLED  
HERMETIC CONDENSING UNITS**

**10 Models - 1/2 - 3/4 - 1 - 1 1/2 - 2 H.P.**



The introduction of Tecumseh water cooled hermetic units will make this the most sought after line in the dealer trade. It is the result of Tecumseh's 22 years of experience in producing over 28,000,000 compressors.

Both high and medium temperature units are supplied in each horsepower to cover a wide range of commercial applications. All models from 1/2 to 1 H.P. use externally spring mounted compressors. The 1 1/2 and 2 H.P. models use internally spring mounted compressors.

All models incorporate a continuous tube condenser and a common flat base.

Dealers now may offer either air or water cooled Tecumseh units for most commercial applications. These units represent maximum savings in cost and provide customers with the most efficient units now on the market.

Cash in on these facts by contacting your nearest Tecumseh wholesaler. Do it today!

● ECONOMY

● DEPENDABILITY

● FREEDOM FROM SERVICE

OVER 28,000,000 COMPRESSORS IN USE TODAY



The World's Largest Producer of  
Compressors for the Refrigeration Industry

**TECUMSEH PRODUCTS CO.**

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Marion, Ohio  
Tecumseh, Michigan